The Builder.

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ILLUSTRATIONS.

Offices of the Life Assurance Society, "Germania," Friedrichstrasse, Berlin (Double-page Engraving).—Herren Kayser & Von Grossheim, Architects 762
Bits from Alton, Hants: The Old Grammar School; Small House in Market-square 764
The Alexandra Theatre, Panton-street, Haymarket.—Mr. Thomas Verity, Architect 766
Wyggestone Hospital, Leicester: New Girls' School (with Plan).—Mr. Edward Burgess, Architect 767

CONTENTS.

A Year's Progress at the British Museum 751
Conferences: French and English 753
Exhibition of Spanish and Portuguese Ornamental Art at South Kensington 755
"Le Salon à Londres" 756
The "Black and White" Exhibition 756
The Storing of Power: The New Birthday in Science 757
Homes and Haunts in the Market: Cowper's Home at Weston Underwood 757
Decoration as applied to Architecture from a Painter's Point of View 759
Offices of the Life Assurance Society, "Germania," Berlin 773
Sketches in Alton, Hants 773
The Alexandra Theatre, London 773
Wyggeston Hospital Girls' School 773
The Scotch System of Taking Quantities: Edinburgh Architectural Association 773
Architectural Association 774
Sanitary Plumbing: Traps and Trap Ventilation 775
From Abroad 776
Foreign and American Serials 776
Plymouth Art-Exhibition 777
Votes for Public Works: Buildings for the Civil Service 777
Obituary 777
Monumental 778
Liverpool 778
Cracking and Crushing Concrete 778
Patent Records 778
The Alexandra Park Estate 778
Sale of Building Land at Kilburn 778
Sale of Freeholds in Wood-street 778
Surveyorship Items 779
The Minimisation of Smoke 779
Right of Buildings to Lateral Support: The Commissioners of Works and Public Buildings v. Angus and Dalton 779
Provincial News 779
Mildew 779
The Plumbing Lectures at the Society of Arts 779
Architects and Quantities 779
Church Building News 779
School Board Schools 780
Variorum 780
Roman Altar at Colchester 780
Sanitary Assurance Association 780
Miscellanea 780

A Year's Progress at the British Museum.

THE Parliamentary return of the account of the income and expenditure of the special Trust Funds of the British Museum, to which are added a statement of the progress made in the arrangement and description of the collections, and an account of the objects added to them in the year 1880, has just been issued, and a very hasty glance at the contents of this instructive document will convince the reader of the great and general progress that has been made. The most important item in the accounts is the new one of the bequest of the late Mr. William White, amounting to nearly 62,000*l.*, inclusive of interests, out of which 200*l.* have been devoted to the erection of sheds in the inner quadrangle of the Museum for the reception of sculptures recently housed under the Museum portico, where the former sheds considerably marred the general *coup d'œil* of the southern front; and between 3,000*l.* and 4,000*l.* in connexion with new boiler, boiler-house, and improved warming apparatus, the comfort of which is greatly felt in the wintry months. The return of the number of persons admitted gives a total of 839,374 for 1880, as against 782,823 in 1879, and 611,612 in the preceding year. On the other hand, the departments of Maps, Manuscripts, and Natural History, and the galleries of sculpture, show a falling off in the numbers of those admitted for special purposes of study or research. The first step in the removal of the natural history portion of the Museum collections was taken at the end of July last by the transport of the contents of the Mineralogical Department to the new building in Cromwell-road, South Kensington, and by the end of September the three departments of Mineralogy, Geology, and Botany were safely placed in their new repository, designated the "British Museum (Natural History)." The minerals not having been displaced from their cases were rapidly made ready for exhibition, but it was otherwise with the fossils and the botanical specimens. In the old building the fossils had been provided with small exhibition space, and a complete set of cases had to be supplied to them in the new museum. There have been delays in furnishing these with internal fittings, and the arrangement of the specimens could not be carried out immediately. But every effort is now being made to press on the work of arrangement in all the galleries occupied by the three departments; and, indeed, the collections have been from an early period accessible to students. The building itself was thrown open to the public on the 9th of April. This removal denuded a considerable space at the British Museum, which has been replenished by the extension and re-arrangement of the antiquities, and by the temporary displacement of the Zoological Department. The sarcophagi, statuettes, fictilia, and other objects of Etruscan antiquity, hitherto only seen at a considerable disadvantage, have been characteristically displayed in the Northern Gallery, which also in another part receives the whole of the immense collection of Egyptian antiquities,—the mummies, coffin-cases, and funereal paraphernalia being arranged in one room, while a second room contains the objects of domestic life, and choice examples of the arts and manufactures which once flourished on the banks of the Nile. The old Egyptian Rooms have been delivered over to the exhibition of fictile vases and miscellaneous Greek and Roman antiquities, and the rooms formerly occupied by the Botanical Department on the front first floor at the eastern angle of the Museum have been assigned to the department of British and Mediæval Antiquities. The prints and drawings have obtained a welcome addition to the limited space hitherto occupied by their department, by accession to the room previously occupied by the Entomological collections, which, together with the store of birds and other smaller specimens of zoology, have gone up to the old Mineralogical rooms, pending their migration to the Cromwell-road building. The remaining part of the unsightly sheds under the columns of the Great Russell-street frontage, after standing for twenty-three years, has been removed; the sculptured slabs from the Amaravati Tope, and other Indian antiquities for the Indian Museum at South Kensington, have been set up against the walls of the principal staircase, and the great collection of drawings and prints illustrating London topography have been temporarily exhibited in the King's Library.

Mr. Bond, to whose energetic superintendence the alterations which we have pointed out are mainly due, reports several interesting circumstances relating to the educational aspect of the Museum; duplicate specimens from the zoological collections have been set apart during the process of arrangement, and presented to several local museums. In this way the Sheffield, Maidstone, Scarborough, Dubin, Calcutta, and South Kensington Museums, and the Oxford Institute have been enabled to enrich their collections with useful objects. Provision also has been made, we are informed, in the estimates for the current year, for supplying a limited number of public institutions in the United Kingdom with electrotype copies of coins, and copies of drawings and engravings taken by a photographic printing process; the object here, as before, being to contribute to the formation of collections of such works in the principal centres of population throughout the kingdom, as a means of education. The printing of the titles of all newly-acquired books, for insertion in the general catalogue, has been carried out during the year on the plan originally devised; and the scheme of printing, in respect to the catalogue of the library, has been further extended to include volumes of that catalogue which have become so filled with entries as to necessitate their being broken up and the slips relaid. The contents of such volumes will henceforth be printed in a form to range with the rest of the catalogue, and with vacant leaves to receive additional titles of books hereafter acquired. Headings of special interest, whether of subjects or authors, such as Academies, Bible, Liturgies, Periodicals, Shakspeare, &c., will be printed in a separate way, and offered for general purchase. Another detail of general administration which will bear good fruit is the expediting of the service of books to and from the reading-room, by bringing in close connexion to it books frequently required by readers; the two capacious galleries running round the room itself will receive a new selection of books, to consist of additional works of reference, and generally such volumes as have been found to be most often asked for by students. This re-arrangement has been already commenced.

During the past year several publications have been prepared by the departments, and published under the authority of the Trustees. Among them we may mention the second edition of the fac-simile of the "Codex Alexandrinus," vol. iv., containing the New Testament and Clementine Epistles, edited by Mr. E. M. Thompson, F.S.A., Keeper of the Department of Manuscripts. This work issues from the press opportunely at the time when the new translation of the Testament has drawn attention of the public at large to the critical study of the Scriptures and the importance of the ancient manuscripts upon which that study is based. The Index to the Catalogue of Additions to the Manuscripts in the years 1854-1875; the Catalogue of the Persian Manuscripts, by Dr. Chas. Rieu, Keeper of the Department of Oriental Manuscripts; a Selection from the Miscellaneous Inscriptions of Assyria, being Cuneiform Inscriptions of Western Asia, vol. v., by Major-General Sir H. C. Rawlinson and Theophilus Pinches; the Guide to the Sculptures of the Parthenon, in the Department of Greek and Roman Antiquities, and the Guide to the Sculptures in the Elgin Rooms, both by Mr. C. T. Newton; Catalogue of Birds, vol. v., Passeriformes, by Henry Seebohm, with coloured plates; two volumes of Typical Specimens of Lepidoptera Heterocera, by Lord Walsingham and A. G. Butler; and several Guides to the Exhibition Galleries of the Natural History Museum at South Kensington, have also appeared during the year under review.

In the Department of Printed Books, 46,174

titles have been printed in accordance with the adoption of that system of reference in place of transcription or hand-copying previously employed. No fewer than the great sum total of 1,107,046 volumes have been required by 133,842 readers, which gives an average of 3,794 books and 458 readers daily. During the year 76,774 books, newspapers, or parts of volumes, have been acquired either by purchase or presentation. Among these may be noted a considerable number of rare Mexican books, bought at the sale of the remarkable collection formed by the late Don José Fernando Ramirez, president of the Emperor Maximilian's first Ministry. Amongst them are a few of the earliest productions of the Spanish-American Press, and some very rare and curious works in the various native languages. Perhaps the most curious book among these is a volume containing two works of Alonzo Gutierrez, called Veracruce, a Spanish missionary, entitled respectively "Recognitio Summularum" and "Dialectica Resolutio cum textu Aristotelis"; they were both printed in Mexico by Juan de Pablos in 1584, and are both of excessive rarity. Bound up with them are two leaves of the Agave paper, such as was in use among the natives of the New World before the conquest of the country by the Spaniards. But the interest to the English student consists in the fact that the title of the latter of these two works is enclosed in the identical woodcut border used by the English printer, Edward Whitchurch, for his edition of the first Prayer-book of Edward VI., in 1549, and which appears to have been exported afterwards to America. It bears the initials of that printer, E. W., but the Catholic emblem of the bleeding heart has been substituted for the shield of arms of Queen Katharine Parr, which previously appeared at the foot of the title. The purchase made at the Ramirez sale, added to the collections already secured from the Andrade and Fischer Libraries, render the Museum extremely rich in Spanish-American literature. Many rare liturgical books have been purchased, principally service-books for various local uses among Continental congregations, printed in the fifteenth and early sixteenth centuries. The earliest of these are, perhaps, the Constance Breviary, 1475; the Dominican Missal, printed at Naples in 1483; the Basle Breviary, 1488; and a Processionale for the Preaching Friars of Seville, 1494. These constitute a very valuable addition to the Museum collection of liturgies, the deficiencies of which are being gradually filled up by purchases made from year to year. There have been added also a large collection of German works and broadsides of the sixteenth to the eighteenth centuries. The Music Library has been well reinforced, chiefly from the well-known library of Dr. F. Gehring, of Vienna, which was sold at Vienna last winter, whereat the Museum secured above 300 works in every branch of music, most of them being of high interest, many of great rarity, and some quite unknown to the bibliographers of music. The Map Department, since the resignation of Mr. R. H. Major, F.S.A., has been made a sub-department of the general library, under Mr. R. K. Douglas, the professor of Chinese. There is little of general interest in the report of this department, but among the acquisitions of the year are,—a large engraved view of Seville, by Fred. de Wit, of Amsterdam, *circa* 1630; another of Madrid; and a series of plans, elevations, and sections of British earthworks and stone remains surveyed by Mr. W. M. Flinders Petrie.

The Department of Manuscripts reports the addition of many important historical, artistic, and literary relics. The principal are,—an Evangeliary, and a Horologion, or daily service-book, in Greek, of the twelfth century; a series of charters, of early date, relating to the little-known Cistercian nunnery of Stixwould, in Lincolnshire, and to the family of Ferrers, Earls of Derby, with fine seals; a roll of the return made to the Crown of all lands, rents, &c., granted or bequeathed in mortmain for religious purposes in the city of London, from 7 Edw. I. to 38 Edw. III., A.D. 1278–1364; a chronicle of Mexican history to A.D. 1576, partly in the native hieroglyphic or picture-writing; the diary of Richard Cock, chief of the English factory in Japan, 1615–22; papers of Richard Baxter, the Nonconformist, in his own handwriting, being portions of his memoirs and fragments of theological tracts, of the time of Charles II.; and correspondence of members of the exiled family of the Stuarts at St. Germains, and its ministers, with the Cardinals Caprera and Gualterio, among which will be found letters of Queen Mary of Modena, James Francis, the old Pretender, the Duke of Perth, the Earl of Middleton, Lord Caryll, D. Nairne, the Pretender's secretary, &c., 1688-1727. This manuscript library has also acquired a series of the correspondence and papers of Simon Fraser, Lord Lovat, relating to his negotiations with the Jacobite and French Courts for the invasion of Scotland, 1702-4, and his correspondence with Cardinal Gualterio during his subsequent detention in France, 1704-6; the correspondence and register-books of Admiral Sir John Jervis, afterwards Earl of St. Vincent, 1757-1823; the correspondence of the Right Hon. Nicholas Vansittart, Chancellor of the Exchequer from 1812 to 1823, and subsequently Lord Bexley, 1796-1844; and the literary collections of the late Charles Wycliffe Goodwin, chiefly consisting of philological notes and dictionaries of the Egyptian and Coptic languages, of which he was so profound a scholar. A portion of the collection of manuscript music formed by Mr. Julian Marshall has been secured for this department, embracing nearly three hundred volumes of the works of English and foreign composers from the sixteenth century to the present day. Some of these are original and holograph, and several have not yet been published. Among them are compositions by Byrd, Blow, Lawes, Jenkins, Handel, Bononcini, Jomelli, Cimarosa, Haydn, Beethoven, and Mendelssohn.

Dr. Rieu, the Keeper of the Oriental Manuscripts, has acquired for the Museum a Pali collection, formed in Ceylon by the late Mr. Robert C. Childers, consisting of twenty-nine MSS., for the most part written in the Cingalese character, partly on palm-leaves and partly on paper. They contain several books of the Buddhistic canon with commentaries, historical works, and grammatical treatises. The same library received seven Mongolian MSS. of large size, collected in Siberia, from 1817 to 1841, by the Rev. Edw. Stallybrass. They include Buddhistic works, tales, history, legends, and various treatises. To this, also, was presented by Capt. S. B. Miles, Political Agent in Muscat, a collection of Syriac, Carshunic, and Arabic MSS., rich in the literature of the Nestorian Church, with portions of the Syriac Scriptures, service-books, lives of saints, records of councils, chronicles of the Church, and theological treatises. One volume of portraits of eighty-six emperors of China, and another of Chinese classes and trade, by native artists, demand attention for the careful details and faithful depiction of the minutiæ of Chinese life. To these we may add a note of the treatise on early Chinese characters from the library of the late Consul Goodwin. Armenian literature, circumscribed as it is, contributes a copy of the four Gospels, with ornamental initial letters of the date 744 Armenian era, corresponding with our A.D. 1295.

Passing now from the departments of Ancient and Modern Literature to those dedicated to the collection of Antiquities, the Oriental series, presided over by Dr. Birch, the Nestor of archæology, presents many new features of progress during the past year. Progress has been made with the lithographic *fac-simile* of an early rectangular wooden sarcophagus, the text of which in time, no doubt, will be edited by the learned keeper. Bronze figures of members of the Anthropomorphic Zoocephalic Pantheon of Egyptian Cultus, silvern figures of Nefertum, porcelain figures of Thoueris the Hippopotamus of the Heavens, wooden coffins gaudily painted with chapter and verse of the funereal ritual or service "Book of the Dead," toys and playthings, vases, leaden and terra-cotta ornaments, and domestic "fixings," have not failed to find their way, by labyrinthine paths perhaps, to the Egyptian collection at the British Museum. As to Assyrian and Babylonian relics, the labour of intelligent excavators, the private enterprise of native dealers, and the multifarious circumstances which always produce a marked gravitation towards an attracting focus or centre, have combined to make up a goodly total of objects acquired by the Department from the mounds and waste heaps which mark the sites of ruined cities, the homes of a teeming and intelligent population, and the abiding-places of those who, in their day, swayed the rod of the empire of the world, until it fell from their grasp in obedience to divine decrees. Where we now pick up an inscribed tablet, or the glittering fragment of a crystal throne, a potsherd with a receipt for taxes or a curse upon a neighbour written on it, or a bottle of iridescent glass, there, a few thousand years ago, a few backward steps of time, throbbed the literary, political, domestic, and artistic life of a mighty nation, little, if at all, less civilised than ourselves to-day, and at any rate actuated by the same motives, impelled by the same springs of action, and controlled by the same human feelings which influence the whole of modern society in these late days,—a rhythmic pulsation which, while it was in full action, created no astonishment among those who contributed to maintain it, but has left little besides the shreds of its glory to be the wonder and admiration of succeeding phases of mundane intellect. In the Assyrian division the whole of the bronze plates from the gates of Balawat have been repaired and mounted, and the Society of Biblical Archæology has commenced the publication of photographs of the curious and remarkable historical scenes with which they are covered in *repoussé* work. From Kouyunjik, the site of Mr., now Sir, Henry Layard's famous discoveries, the Museum has obtained parts of a small, delicately-moulded man-headed bull, the pedestal finely ornamented with bas-reliefs, taken from the site of Sennacherib's palace; terra-cotta cylinders containing the annals of the earlier years of Sennacherib's reign, closing with the expedition of that monarch against Hezekiah, king of Judah, and dated B.C. 700; a letter, written on clay, to Assurbanipal relating to a king of Elam; and another to the same from his brother Samassumaukin, king of Babylon. Babylon contributes a very ancient inscribed cylinder of green jasper, of a date about B.C. 2,000; a finely-sculptured figure of Assurbanipal, king of Assyria, in high relief, attired in regal robes, and with the distinguishing head-dress, bearing on his head a wicker-basket (the back and sides of this figure are inscribed); a very fine bilingual list of words from Birs-Nimroud, and several other important syllabaries and bilingual texts of immense value towards deciphering the language and settling the philology, which is still uncertain and frequently disputed. From Van come an interesting bronze ornament, perhaps part of a throne, decorated with the figure of a lion couchant, and inlaid with concentric rings of composition, alternately black and white, with traces of gold overlaid; fragments of a leaden object, probably used for decorative purposes, inlaid with rings of blue and white paste, and ornamented with blue glass beads; and a white ivory human figure, winged and eagle-headed, resembling the Assyrian god, Nisroch.

The acquisitions of Greek and Roman Antiquities by Mr. C. T. Newton comprise additional fragments of the frieze of the Parthenon; a sepulchral relief in marble, representing a banquet-scene, in which a male figure reclines on a couch, and a female is sitting feeding a snake coiled round a tree; and a marble statue of a boy extracting a thorn from his foot,—a most rare and interesting work of the realistic school of Greek sculpture which flourished about B.C. 200. This statue was found on the Esquiline Hill at Rome, and formerly belonged to Monsignor Merode, from whom it passed to M. Alessandro Castellani, through whom many antiquities have been obtained for the Museum. Excavations in Cyprus, made famous by the successful diggings of General di Cesnola and his brother Major di Cesnola, have contributed *fictilia*, bronzes, inscriptions, statuettes, beads, mirrors, and miscellaneous implements from sites at Aradippo, Bamboula, near Larnaka, Amathus, and Limasol.

The Department of British and Mediæval Antiquities and Ethnography has witnessed the introduction of the larger specimens of prehistoric antiquities from the Christy collection, and considerable rearrangements in consequence of the increased areas now at the service of the department. The Rev. W. Greenwell, whose gift of an extensive, indeed unparalleled, collection of early remains excavated by him in British barrows we noticed last year, has presented some further additions recently obtained by him from barrows near Lambourne, in Berkshire; among them is a remarkable axe of stag's horn, and a fine pierced axe of stone. Cinerary urns from Dorsetshire, Suffolk, and Lanark; a barrow urn from West Tanfield, Yorkshire; and a plain urn from Toddington, Bedfordshire; a hoard of bronze implements found in the parish of Meldreth, county Cambridge; numerous late Celtic antiquities; miscellaneous bronzes from foreign countries; the centre of a Roman mosaic pavement, found in 1803 in Leadenhall-street, near the old East India House, representing Bacchus riding on a

panther; portions of two bronze tablets recording military privileges granted to soldiers who had served in Britain under Papirius,—a hitherto unrecorded Prefect,—by Antoninus Pius in the year 146, found at Cilurnum, or Chesters; a collection of antiquities found at Longbridge, near Warwick, by Mr. J. Staunton; a remarkable hoard of silver objects, found in 1774, at Trewhiddle, near St. Austell, Cornwall, with numerous coins, consisting of a cup or chalice, a chain with knots supposed to be a penitentiary *disciplinarium*, and various ornaments, to which a date coeval with the reign of Alfred the Great, about A.D. 878, has been reasonably assigned; and a marble bust of John Churchill, the celebrated Duke of Marlborough, by M. Rysbrack, make up the most important additions to the ever-increasing treasures of this attractive section of Museum subjects.

The antiquities transferred from the India Museum consist of (1) sculptures from North Afghanistan, exhibiting a style of art strongly influenced by Classic feeling, and derived at some unknown period in all probability from Bactrian schools of art; (2) sculptures from the great Buddhistic tope, at Amaravati, in the centre of India, partially excavated by Colonel C. Mackenzie, in 1816-7, and further exhumed in 1845, by Sir Walter Elliot. The material of which they are composed is a kind of limestone or marble, very liable to decay, and the sculptures have suffered much under the various vicissitudes to which they have been exposed. Still they afford a most remarkable illustration of the art of the period to which they belong, and form a rich treasury of Buddhistic iconography; and the wheel-shaped bosses or roundles are of excessively beautiful design. Among the subjects selected by the sculptors are numerous representations of episodes in the life of Gautama Buddha, as well as of his previous births; (3) a portion of Mr. C. Masson's collection of steatite relics from the topes of Afghanistan, belonging in point of date to the early centuries of the Christian era; (4) copies of paintings found on the walls of the celebrated Buddhist caves at Ajanta, situated to the north-east of Bombay.

The Christy collection, of which a further portion has been removed to the Museum, has received donations of prehistoric antiquities from Suffolk, Yorkshire, Spain, Italy, Sicily, and Asia Minor; collections of arms, dresses, and personal ornaments obtained during the Zulu war; rare clubs from the Oceanian and Australasian islands; and ethnographic specimens from America. The trustees of the Christy collection have purchased also, from funds at their disposal, a valuable series of weapons, dresses, and other objects used by the Malays and Dyaks, in Borneo, Sumatra, Java, and Celebes, collected in those regions by Mr. Carl Bock during his recent travels there.

The Coin Department announces the acquisition of several fine Greek types, among them a remarkable medal struck by Agathocles, king of Bactria, in honour and memory of Alexander the Great. It has received also a series of military medals issued by the East India Company and by the Indian Government.

The Departments of Natural History, whose head quarters must now and for the future be sought some three or four miles further to the west than their old home at Bloomsbury, although still under the same conditions of management and superintendence, have been busy at work in facilitating works in progress for providing additional spaces for the antiquities, which have necessitated the removal of books, documents, and specimens to temporary positions; nevertheless, opportunities have been taken of adding new and interesting specimens to the zoological series still open to the public at the British Museum, as, for example, in the stuffed and mounted specimens of the sea-lion, and in that of the Californian maned wolf. The exhibited heads, preserved in spirits, of the adult male and female of the Orang-Utan of Borneo afford, Professor Owen tells us, striking exemplification (imperfectly given in dry and stuffed specimens), of the strange physiognomy and strongly-marked sexual distinctions of that species of large anthropoid apes. In the Zoological Department complete study-sets of the collections of terrestrial mammals, birds, ostracoda, corals, &c., made during the voyage of H.M.S. *Challenger*, have been deposited, in pursuance of the order of the Lords Commissioners of the Treasury. A fine collection of marine crustaceans, including a set of fish-parasites, has been added. Human crania of the stone age; rare mammals; birds from many remote lands, collected by Dr. Bradshaw in the Zambesi country, Mr. Blanford in Sikhim, Mr. Bourdillon in Travancore, Dr. Bock in Sumatra, Mr. Layard in New Britain, and Lieut. Richards in the Solomon Islands; reptiles and amphibians of equal rarity and equally distant places; fish, molluscs, crustacea, and arachnids, the latter including a specimen of the rare and interesting hunting-spider from Afghanistan, and a new genus of the humped spider from Madagascar, have also been received into the cabinets. Of the insects alone upwards of fifteen thousand separate specimens have been obtained from places too numerous to mention here, by the indefatigable zeal of scientific explorers and learned travellers. The work carried on by the staff of the Geological Department has been of an exceptional and peculiarly arduous nature by reason of the removal of which we have already taken notice. And the task of re-arrangement is now, and has been for several months, in active progress, most of the large specimens being placed, and many of the new galleries temporarily utilised for the display of fossils. To this department have been added many remains from British formations, including part of a *Plesiosaurus* from the Lower Lias, Denton, Lincolnshire, and of the *Chæropotamus Cuvieri* from the Lower Eocene formation at Seafield, in the Isle of Wight; while excavations by Major Tovey, R.E., at Edmundsea, near Waltham Abbey, have brought remains of *Bos Longifrons*, and of the horse, pig, goat, and dog species. An entire skeleton of a new and remarkably small species of *Dinornis* from New Zealand in a singularly perfect state of preservation, is perhaps the most valuable acquisition in its own proper class. The London clay of Sheppey, Whitly, Hastings, Dover, and many other fertile British sites, have contributed their share of wonders of the antediluvian ages to the shelves of the new building at South Kensington.

The scientific catalogue of the Mineral Department has not, we are informed, progressed with great rapidity during the past year; ever since this important task was begun, the dependence on Bloomsbury daylight for purposes of crystal measurement has been, especially during the winter months, a serious hindrance to the satisfactory investigation of the exact forms of the crystals; and this will be more easily understood when we remember that the angles of a crystal,—and hence its symmetry,—are determined by help of the reflections of a signal from the various faces, and that unless the signal be very bright the position of its image as seen in a small crystal-facet is not susceptible of accurate observation. Mr. Fletcher hopes, however, that the daylight of Kensington, and the artificial light which will soon be available for scientific purposes, will conduce in no small degree to the advancement of this portion of the work. On the other hand, the available energy of the Department has been concentrated during the latter part of the year upon the removal of the contents of the Old Gallery at the British Museum to the New Gallery at South Kensington. This transportation has been effected almost absolutely without damage to the specimens, from the most delicate of which scarcely a crystal has been disturbed during the transit. As arranged in the old gallery, the specimens illustrating species and varieties were exposed to visitors in the tops of table cases. These have been left behind, while the pedestals have been transferred and built up into larger cases, for which new tops have been made, and in them are now displayed all the minerals formerly exhibited, supplemented where necessary by specimens from the drawers. This collection, probably the finest in the world, has been for the last two months available for students, every specimen being accompanied by a descriptive label. The glazed ends of the cases are gradually being provided with requisite fittings to accommodate the larger crystals. It is expected that this work will be completed within a few weeks. Among the acquisitions in this division of the Museum are a large group of lenticular crystals of selenite, inclosing sand, from the neighbourhood of the second Pyramid of Egypt, which has been presented by Professor Owen; a large piece of the meteorite which fell at Estherville, in Emmet County, Iowa, U.S.A., on the 10th of May, 1879, weighing 258 lb.; and a meteorite stone, weighing 3 oz. 8 gr., which fell in the Bois de la Fontaine, near Mung, in Loiret, in 1825.

The ordinary work of the Department of Botany was, in like manner, interrupted by preparations for, and commencement of, the removal of the collections to the New Museum. The Herbarium, however, was accessible to students throughout, with the exception of the time actually taken up in the passage from one building to the other. To this Herbarium numerous additions have been made from the usual sources, to which scientific travellers so frequently and so liberally contribute. To the British division have been added a large collection of the plants of Oxfordshire, formed by the late Mr. Alfred French, and consisting of 2,482 specimens; and the important set of Lichens, formed by Mr. W. Joshua, containing 976 species in 1,500 labelled specimens.

The Department of Prints and Drawings has done good service to art by the completion of the fourth volume of the Catalogue of Satirical Prints, containing upwards of 1,400 satires from 1761 to 1770. A second volume of the Catalogue of Early German and Flemish Prints is in hand. Among the purchases and gifts are many rare and unique examples of the various modes in vogue for illustrations; the principal purchase being that to which we have already alluded, the extensive collection of maps, plans, and views of London, formed by the late Mr. Frederick Crace, consisting of nearly 6,000 prints and drawings, two volumes of maps, and one volume of Frost-Fairs on the Thames. The gradual growth of the City is thus shown in a remarkably perfect manner by the maps, which commence with Vertue's copy of that by R. Aggas in 1560, and continue without a break to the present day. Among the drawings are numerous examples of the works of P. & T. Sandby, W. Capon, R. B. Schnebbelie, Major Yates, J. Buckler, and J. H. Shepherd, which are of great artistic merit. The last-named draughtsman was employed by Mr. Crace in making water-colour drawings of old buildings and streets in the City expressly for this collection.

The past year has been, therefore, as we see by the above notice of a few of the principal events, one pre-eminently of advancement. Not only have the acquisitions throughout every section been of a high order of excellence and exceedingly numerous, but the methods of display, the opportunity of re-arrangement, and the increased facility given to the public of inspecting these acquisitions have all operated towards the attainment of the chief aim of the present administrator, which is, undoubtedly, to bring before the visitor, whether highly or moderately interested in what is before him, the importance of the British Museum collections as a means of education and mental advancement, second to none in potentiality and attractive influence over the æsthetic feelings with which we are now as a nation becoming imbued.

CONFERENCES, FRENCH AND ENGLISH.

WE have often remarked that our neighbours across the Channel are exceedingly deliberate in the publication of such things as reports of the transactions of societies of any kind. They do that kind of thing very thoroughly, when it is done, but they certainly take time about it. Hence it occurs that the full authorised report of the International Conference or Congress of Architects, held at Paris in 1878, only reached us a few weeks ago, not until after we have already had the contemporary journalistic reports of another recent congress there of similar kind. Nevertheless, the report of the "Congrès International des Architectes," of 1878, reaching us almost at the time when our own last architectural conference was being held in London, need not be regarded entirely as *passé* in its interest. On the contrary, it has come just at the moment when it seems naturally to suggest some little comparison between the recent conference in London and the way they manage these matters in France.

The French have always been characterised by the importance they have attached to ideas and ideals as the basis of practical work in all important subjects, from politics and sociology downwards. The presence of this element of the Idea in the report of the proceedings of the French congress is what especially strikes us in comparing these proceedings with those, not to be published in the same form, of the recent conference in London. Our conference plumed itself on being eminently a practical one, and may be said to have been so, in its method and choice of subjects. But it was certainly somewhat restricted in its interests. Details of

professional business occupied the greater portion of its time and interest, and the artistic elements of architecture, and the wider interests of the subject, as a whole, were not touched upon this time at all. The artistic element, in fact, was only represented by the contribution of papers on fresco-painting, by two painters, and these cannot strictly be regarded as architectural subjects, and were not treated by architects.

The French congress had its debate on professional business also, and a tolerably lively one, as the detailed report now shows us, the subject having been the consideration of a tariff of charges. One or two points in this discussion, now for the first time given us in full, may be worth a note before we quit the subject. But the business part of architecture did not occupy anything like so large a proportion of the time of the meeting as at our recent meeting. And what did occupy a considerable part of the time is as significant as what did not. The French architects are not afraid of being stigmatised as unpractical if they give some thought and consideration to the subject in its widest aspect. Accordingly, we find one of the first papers read was one by M. Achille Hermant on "Æsthetics brought Home to Every One" ("L'Esthétique mise à la Portée de tout le Monde"). Another paper, the largest and most important that was read, was on the general consideration of the nature of an architect's profession, its position in regard to engineering and to contemporary professions generally, and the nature of the training and education which an architect should go through. This paper amounts, indeed, to nothing less than an attempt to define the architect and his work on a basis of first principles. Akin to this was another paper especially considering "architects and engineers," and the distinct character of their labours and the places they take in the economy of society. Then there are two papers on the reorganisation of the "personnel du bâtiment,"—one in regard to the education of artisans for their craft, and the other a report in regard to the organisation of building artisans "au point de vue moral et matériel." These are, in some measure, "practical" subjects only, but practical subjects of very wide interest indeed. Then we have a critical paper on the architectural designs in the *Salon* of the year, and we come on a discussion elsewhere as to the principles on which architectural societies should be framed and should guide their action.

Now, if we compare all this with the proceedings at the recent Conference in London, we certainly must admit that there is a very great contrast in regard to the breadth of view of the two meetings, and that there is something more important, more dignified, and which impresses one as more worth discussion, in this list of subjects, abstract and ideal as some of them are, than in the endless hair-splitting about quantities and quantity-surveyors which filled such pages of the journalistic reports of the London Conference, and in which so much time and so many words were expended over a mere business detail, the real point of which most of the discussionists failed to grasp after all, and which has nothing to do with the subject of architecture proper. Having pointed out this contrast and drawn the moral from it, we do not propose to say anything more on the well-worn subject of the recent Conference and its discussions. But as the report of the French Congress, though so far behind time (and it is really a pity our neighbours cannot remedy this dilatory habit of publication), comes to us in some degree as a new publication in relation to architecture, we do not see why we should not treat it accordingly and say a word as to one or two of the views advanced in it.

The point of the essay before referred to, on "æsthetics brought home to every one," is in the endeavour of the author to remove from the class of considerations usually defined as "æsthetic" the idea that they involve a kind of "mystery" only to be comprehended by an initiated few: to represent the idea of æsthetic studies as simply the study of the meaning and conditions of artistic works, in order to acquire the power of correctly judging of and understanding such works. It is represented that people are repelled from the study of art (as distinct from the practice of it) by a mere word which has come into use in modern times for convenience' sake, the meaning of which is quite simple and straightforward, although it has got to be regarded with a kind of superstitious awe. So far from æsthetics being essentially a study for an exotic circle, M. Hermant urges that it is precisely artists who do not require to study æsthetics (we are not *quite* prepared to agree with this), since they are occupied not in forming judgments on art, but in producing art. It is the mass of people who are not artists whose office it is to judge of and to enjoy art. But they, as a rule, get no training to enable them to do this; the working-classes especially are left to find out any how, if they try to find out at all, what is the meaning of art. M. Hermant thinks not only that æsthetics, in the sense which signifies the power of judging of art, is a study which may be made practical, but that it may be made a practical one for all classes, in elementary as well as in higher education, as far as elementary education goes. Twenty years ago the author of the essay in question made the complaint in print, that, "in relation to art, public instruction is entirely dumb, so much so that it would be impossible to find any one anywhere capable of understanding art, appreciating it, or speaking of it with intelligence, if a desire to know its beauties, a certain inward tendency towards works of imagination, an instinctive feeling of the grandeur of the creations of genius, did not lead people who are endowed with these feelings to search out for themselves that which no one has endeavoured to teach them." In our own country this was universally so until a very recent period, and it was a complaint sometimes that a man at our universities might learn very thoroughly to appreciate the style and the beauties of authors of ancient times, but that he might go through his university career, and go through it with honour, without knowing a single fact about the great arts of architecture, sculpture, and painting, or gaining the slightest power of forming a judgment of the merits or interest of such works. The foundation of art professorships at the universities has brought the possibility at least of artistic teaching there, though we believe it is still no necessary part of the curriculum; but in our schools we believe anything like instruction about art, beyond lessons in drawing (generally very meagre), is almost entirely absent. Into the ideas about the science of æsthetics which are promulgated in M. Hermant's essay we cannot enter now,—to consider them at all fully would occupy too much space; but the main idea laid down in the essay, that works of art are not rightly understood without special mental training, that such training might and should be a part of general education and is notably absent from it, is as true unfortunately for our country as for France. In both countries, in ours especially, such training would probably be regarded by "practical" men as unpractical, and as a kind of beating the air. We have to get rid of this idea; to see that instruction in art may be just as well given as instruction in moral philosophy, and that the one is no more a mysterious and vague study than the other, perhaps rather less so; and that conviction may possibly pave the way to make "æsthetics," which is simply the power of understanding and perceiving aright about art, a part of general education. If that is ever brought about, then, and not till then, we may see crowds going about in exhibitions and looking at works of art with the understanding as well as with the eyes, instead of hearing, as we now do at every turn in the annual Academy exhibitions, remarks which argue an utter want of power to understand the merits of a picture, or even of any perception as to what pictures are painted for.

The paper by M. Davioud on architects and engineers touches on a subject to which we have several times given some special consideration. Some of his conclusions in regard to the state of the profession in France are more similar to those which have sometimes been expressed in regard to the condition of English architecture than would have been expected. M. Davioud divides the architects of France into three classes: (1) those who are true artists and of unquestioned talent, and an honour to the profession; (2) those who, with a very good will to attain the front rank, are deficient in special aptitude, but who become, nevertheless, useful and enlightened in regard to practical domestic architecture; (3) those who may be called "usurpateurs," who have never made any serious study of architecture, but who have been sufficiently familiarised with building operations to keep up appearances and to claim 5 per cent. for what they carry out, on the same terms as the more able architects. On this point of the 5 per cent. it seems from other pages of the report that M. Davioud entertains very strong opinions, considering that the existence of this tariff, and the system on which it is calculated, are most injurious to the *status* of the profession, and that it should be free to every architect to name his own price for what he undertakes, just as a painter does with a picture. If architecture is regarded as an art, and M. Davioud strongly emphasises the artistic side of it, this conclusion seems inevitable. In many practices it is so much mingled with what is purely business, that the argument can hardly apply. In regard to the relation between architects and engineers, M. Davioud seems to have thought that theincreased employment of iron in building of all kinds will tend to assimilate the professions more; but he does not prophesy much good to the architects from closer contact with the engineers. Of the ability and learning of French engineers he speaks, as every one must, with the highest respect, but their critic in this case affirms that they work under conditions utterly inimical to anything like artistic feeling. Being so largely occupied under Government, and under the rule of a central official engineering head, they form a kind of *embrigadement*, who carry out work on a fixed type, to the especial glory of the department "des Ponts et Chaussées"; or, as we might say, for the satisfaction of the Board of Works. The influence of such formulated officialism is always fatal to the individual freedom which is a necessary condition for producing anything worth calling art. At the same time, M. Davioud has placed on record his opinion that the architect of the present day has much to contend against in consequence of superficial instruction in regard to the scientific and administrative sides of his profession, and furthermore in consequence of the want of cohesion among members of the profession themselves. This latter failing appears, then, to be one characteristic of the profession in other countries besides England. The engineers have always shown a strong *esprit de corps*; the architects always seem to want that. We had been rather under the impression that this was a peculiarly-marked characteristic of the profession in England. It seems to be otherwise. It may not be a very philosophical source of consolation to find that others are as bad as ourselves, but it is a sort of consolation for all that.

The very important and seriously-reasoned paper on the professional education of an architect, by M. Trélat, belongs to the same class of subject, and, in fact, touches again on the same question, the relation between the architect and that "*personnage récent*," the engineer. The director of the "École spéciale de l'Architecture" distinguishes very precisely between architect and engineer: he sees a strong line of demarcation between them. The engineer has no concern with form, his only aim is to secure the maximum of stability with the minimum of material: "Il mesure tout ce qu'on demande, et il dessine tout ce qu'il a mesuré." The architect is concerned to give to such structure also unity of form and expression, which to the engineer are nothing. The position of the two professions being in this sense so opposed, M. Trélat urges that their respective fields of education and of practice should be more strictly defined and adhered to. The engineer requires a specially technical education, with the architect "il faut d'abord soigner et developper l'artiste." The architect is a constructor certainly, but a constructor "tout à fait spécial." When he constructs it is not permitted to him to be exclusively occupied about the resistance, stability, and permanence of his work. More precious considerations turn his attention imperiously towards the ultimate *form* of his work. But the realisation of that form demands in the majority of cases a much larger quantity of materials than mere stability and permanence call for. He is thus not tied down rigidly to the conditions of merely practical requirements. The way in which M. Trélat sums up this is so very bold and so very candid, that we will translate his succeeding paragraph as it stands:—

"From the day when you make of the architect a man who will work out equations of stability and of resistance for every element of his building, from that day you will have no longer an architect; the artist will be dead, the engineer alone will remain. But the method of construction of the architect is a very well-known and very ancient one. It is the empirical method. You know what empiricism is. Experience, without theory. As long as the field

for the application of this method is not continually assuming new aspects, as long as experiences are ample, empiricism is sufficient. Observe, that these are the general conditions" (constructionally) "of architectural work; and that explains the love and fidelity of the architect towards empirical methods. The man who has a high feeling for Form, who knows well that this is always the last word he should write, the last supreme impression which should be given by his work, finds in the very simplicity of empirical conditions the liberty to fulfil without distractions his *rôle* of artist and to carry out construction under normal conditions. I do not deny that the architect will encounter sometimes exceptional circumstances, unexpected problems and conditions; for everything is renewing itself under our eyes, society is making fresh evolutions unceasingly. The buildings necessary yesterday are not those necessary to-day. We see now buildings which, instead of consisting of masses of piers, seem rather to consist of openings. I know well that one must, under such conditions, appropriate the materials to new problems, and that the construction must lose its simplicity. There is no doubt that in these particular cases, the science of the engineer is a necessity. But it is precisely at this point that the engineer intervenes. The engineer is the man of new edifices, the man of constructions unknown yesterday, the man of bold and conclusive experiences. It is when he has given his sanction to the methods imposed by the necessities of the time, when they are reduced to empiricism, that the architect adopts them."

This is a remarkably bold and candid way of putting the matter, and is not our way; yet there is some truth in it, and it tallies, moreover, with what may be said to be the general relation of science and art in successive development.

There is much more in the volume of the Congrès International of 1878 which is interesting and worth reading, both when it accords with and when it differs from current opinion on similar professional subjects in England.

EXHIBITION OF SPANISH AND PORTUGUESE ORNAMENTAL ART AT SOUTH KENSINGTON.

SOME will doubt the wisdom of the Science and Art Department in selecting Spain and Portugal in their first endeavour to induce foreign Governments and foreign nations to combine with them and get up an exhibition of some one national art, or group of national arts. It is, indeed, a question whether Spain or Portugal had at any period of their history any art which deserved the name of national. Conquered or conquerors, they were either harried slaves of a dominant alien race, or the proud rulers of peoples who hated them. Neither of these phases of national life is favourable to the cultivation of the arts, which have always flourished most where Freedom has made her home, and she has hardly ever domiciled herself in the Iberian peninsula. Spain did not make her art: she stole it ready-made. In her earlier history that she had she obtained from the Moors. In her later she filched it from the Flemings. The art of Portugal is equally alien, and derived from that furthest Ind Vasco de Gama led the way to. It is difficult, then, to discover a reason why Spain and Portugal,—the mere camp-followers of the arts,—should be thus selected to lead the van. Perhaps the reason for the selection may be found in the fact that the Museum already possesses a very large collection of so-called Iberian art, and the indefatigable collector of the greater part of it has more he desires it to possess. How rich the Museum already is in Spanish and Portuguese objects is shown by the fact that out of the somewhat more than 1,500 entries in the catalogue of this special exhibition, nearly 900 are already the property of the nation. The conjoined countries, indeed, add barely 250 to the tale; and of the remainder, 270 are lent by English collectors,—the most part of which were derived from that same source which has so largely enriched the Museum and their importer. From the French collectors and dealers come nearly 200 objects; so that it will be seen that the Governments sought to be interested are almost the smallest contributors to this gathering.

Still, what comes to us from foreign sources and from the private stores of our English amateurs is well worth noting. To note those things belonging to the Museum would be a work of supererogation, inasmuch as "the Department" has already published a hand-book, a catalogue, and a history of Spanish art, all having special reference to its own possessions. Our notes will therefore be, for the most part, confined to those examples which are here on loan.

The first impression we receive on entering the gallery is that Spain and Portugal were pre-eminently remarkable for their works in metal, for the collection is large and important, both in works in precious metals and in iron. Indeed, the Moors, who created the metallic arts in Spain, never found in all their wandering such fine iron as that country produced and yet produces. This they converted into the purest steel, and tempered to the hardest and yet the most elastic pitch, until Toledo blades became a synonym for perfection. They chased and inlaid it with precious metals, impressing the art and name of their loved Damascus upon it until, wherever it may be done, Damascening yet recalls that Mauresque process they carried to such perfection in Toledo, where the art yet lingers, and whence comes the finest workmanship in this branch of art the world now produces. All this founded a good school of blacksmiths, and in the South of Spain,—indeed, wherever Moorish influence made itself felt,—the ironworker's craft to this day predominates. Unfortunately, we have hardly anything of early character in ironwork exhibited, but of sixteenth and seventeenth century work there are some notable examples. The large screen which half spans the gallery, and which came from Avila Cathedral, is an admirable bit of Renaissance design, and an excellent piece of *repoussage*. It is three bays in length, each containing seven long circular baluster-like uprights, which are bounded by square pilasters, whose faces are covered with *repoussé* plaques of exceedingly simple but very effective design. But though the handicraft of this is Spanish, the design is that of "Joan Frances maestra major de las obras de fierce," so that even a foreigner had yet to direct them in their metal work. Akin to this is an admirably-designed processional cross, in *repoussé* iron,—one bearing mortuary emblems, and used in funeral processions, and which now belongs to the National Archæological Museum at Madrid. It will be found in the cases just southward of the screen. It is numbered 3 in the catalogue, but as the numbers crop up in all sorts of places, or are at present omitted altogether, excepting in those works lent by the Governments of, and collectors in, Spain and Portugal, it is not much use quoting the numbers without indicating where they may be found. But it is worth seeking for to notice the admirable contour of the knop and its clever construction. The candelabra which stand in close contiguity are good examples of simple beaten work, but it will be remarked how little part pure forging, such as we find in the ironwork of almost every other country of Europe, plays in the ironwork of Spain. Iron was treated there in the same fashion as the more ductile metals, such as copper, and the first instinct seems to have been to hammer it into a plate and then make the best they could out of it. In this the Eastern sentiment is patent; it could all be done with light and little tools, and chiefly wrought in its cold state. When we examine the works in steel we shall find the same industrial sentiment predominating. The chisel and the file, tools used on the cold metal, and with which the workman could sit whilst using, have left their trace more strongly than the hammer; and the ethnology of the art of Spain, as shown in her ironwork, is decidedly Eastern. The highest triumph of the work in base metals is, however, seen in the arms, and at the further end of the court will be found three suits of half-armour, made for Philip III., who drove away that artistic race, the Moors, whose sojourn in his kingdom had rendered such gorgeous apparel possible to him. Two of these are evidently the work of the same craftsmen, and are beautifully ornamented with heraldic insignia, and trophies of arms enclosed in a lattice work of delicate foliage, and are as fine as anything wrought during the latter part of the sixteenth and early years of the seventeenth century which exists in any country. The Royal Armory at Madrid is indeed the richest storehouse in Europe, and we regret we have so little from it. At Paris, in the Retrospective Museum, formed at the Exhibition of 1878, it was lavish of its treasures: so we had hoped that we should have seen more of them in London. There is one case of five locks which will interest our readers the architectural front of one of them being of singular purity of design and refinement of proportion. Unfortunately, the mechanical construction is not visible, but it is doubtlessly of wonderful ingenuity, for even in the arrangement of their wooden locks the Eastern races exhibit a cunningness which would put to shame the 'cutest American. In purely chiselled steel, the steelyard from the National Archæological Museum at Madrid, the work of Maestro Salinas at the end of the sixteenth century, is a remarkable example of skill and design, but is eclipsed by a plaque of chiselled work, veritable sculpture in steel, which belongs to M. Spitzer, of Paris; it bears the arms of Charles V., surmounted by the Imperial crown, and is cut from a solid block of steel, being probably the *pièce de maitrise* of a Spanish armourer who thus proved himself worthy of admission to the Guild of his craft.

Of the works in precious metals, the most abundant,—indeed, well-nigh all,—are ecclesiastical, and though these are of very great technical merit, yet the very fact that they are ecclesiastical impresses upon them a certain rigidity of design, which prevents their having any national characteristic. Most of them are exceedingly German in their type; for, of course, the Moorish element did not imprint itself very much on the Church's work. The Portuguese chalices are interesting as retaining the early Byzantine shape of the hemispherical bowl seated directly on a globular knop, without the intervention of an upper stem, down to a much later period than any other European Church; but, as a rule, the Church plate does not present any generic difference to that of the other parts of Europe. Its specific variation will be found admirably descanted on in the Baron Davillier's excellent "Recherches sur l'Orfèvrerie en Espagne." The Baron is a large contributor, sending some fifty examples of Spanish art, many of which were collected by Fortuny, the regenerator of the pictorial art of his country; for the Baron Davillier was that artist's executor and biographer, and acquired many of the finest specimens he had collected.

Of sculpture we have but little, and with the exception of Alonzo Cano's celebrated statuette of St. Francis d'Assisi, nothing of a very high degree of merit. This statue is, however, one of wonderful merit. Fervent, tender-hearted, self-sacrificing, poetical, and full of holy thoughts, the character of St. Francis has always presented to the religious artist a psychological study of the greatest interest, but, at the same time, one requiring the utmost refinement in artistic treatment, and very rarely has this refinement been reached. Alonzo Cano did reach it, and in that look of rapt ecstasy which he has here implanted in the face of the saint he achieved the highest sculptural power of expression. It is a strange commentary on the change that has taken place in the religious feeling of Spain that this statuette, which was once jealously guarded from the gaze of even the orthodox, should now be exposed to public view in heretic London, and that instead of being the cherished prize of the canons of the cathedral of Toledo, it should now form part of the collection of a French amateur, M. Charles Stein, of Paris. So rigidly, indeed, was it withheld from view, that a few years ago the Emperor of Brazil was unable to obtain a sight of it when in Spain, and now the poorest visitor to the Museum may enjoy and wonder at this most noble work. This calm rigid figure, simply vested in the friar's brown frock, which hangs with the meagrest folds about his attenuated form, seeks by no trick of art to arrest attention,—the very hands and feet, stigmata pierced, are hidden. No grace of pose is here, nothing to appeal to our senses; only our souls are touched by that upward gaze of the servant who, like his Master, was a man of sorrows and acquainted with grief. It is hard to turn away from that extatic face, and one finds oneself returning to it again and again, in awe and wonder. There are many other religious figures here, and it is an illustration of the influence of this one, that several copies of it are to be found in this small collection; but this figure of Cano's soars so far beyond all others, that it is somewhat difficult to recognise the good they do possess. All the wooden ones for church purposes are painted like those Flemish figures from which they were borrowed; but the Spaniards painted everything, down to terra-cotta; nor was it until quite late that the naked wood was left, and sculpture, unaided by colour, allowed to tell its

own story. In decorative carving of this latter class, there are some charming examples in drawer-fronts, lent by M. Paul Recappé, of Paris, in which, on the restricted space thus presented, there is arranged a series of human figures, which almost reach grand art, and which may be from the hand of Berruguete himself. In his style are some other drawer-fronts, lent by M. Charvet, also of Paris. These elaborately-carved fronts are from the presses of the sacristies, in which the ecclesiastical vestments were kept. Of domestic furniture we have very little. There is a fine cabinet lent by Mr. Odiot, of Paris, in which the sculpture is decidedly Flemish, and some fair examples of the Indo-Portuguese style, but nothing of any exceeding merit. This is much to be regretted because in our Charles II.'s time English industrial art received a great impetus from the introduction of this class of furniture which accompanied his wife, Catherine of Braganza, to this country. Of the old Spanish leather we have very little, and Cordova, which gave its name to our "cordwainers," has none of its glories represented. There are two interesting shield-covers: the one of purely Arabic character, and dating from the fifteenth century; the other, a century later and of Christian bearing, but showing how strongly the paynim had impressed his art even on the shield of a prince of the true Faith; and in a cabinet from Mr. Spitzer's collection is some very beautifully tooled leather in the panels; the ground is a deep smalt blue, and the figures are gilt, the lines being engraved or impressed by a sharp fine tool like a graver. The drawing of the youth and the maiden, who stand gazing at each other across the "fountain of love," is a splendid bit of sixteenth-century work,—a work of consummate art. Of embroidery there is no end,—admirable work, too, much of it, though into the intricacies of its detail we cannot now enter; but there is throughout the whole of it a sad lack of any specially artistic quality whereby to distinguish it from the contemporary needlework of France or Flanders. Some little tapestry,—itself a Flemish art,—and some imitative pottery of the last century, from Buen Retiro, show how Spain paid for art, but created it not. Of its true pottery, the Hispano-Moresco, there is a goodly show, but not so fine a one as has before been held in these same galleries, and nothing equalling the late Mr. Henderson's gift to the British Museum. The arts of the East and of the West met in Spain and Portugal, but the hybrid which sprung from their union was sterile. If the true progeny of these two races is to be studied, let the Department turn its attention to that more fruitful land which is watered by the Danube. There in Hungary, in Lower Austria, and in Eastern Russia, a commingling of these two currents will be found, whence new forms, new combinations, and new ideas yet may spring.

"LE SALON À LONDRES."

THIS is rather too pretentious a title to give to the collection of recent French paintings which has been opened in the Galleries at the Leicester-square panorama, but the exhibition really contains some remarkable works, and some which are peculiarly interesting as illustrating certain tendencies of modern French painting, not in all cases good, certainly. Among the works, however, which it is an unalloyed pleasure to see, are the three or four contributions by M. Lefebvre, who has the merit (rather too distinctive a merit among contemporary artists of his country) of painting the nude figure not only with the highest technical finish, but without a *soupçon* of vulgarity, and in a spirit that renders the painting really subservient to poetic and imaginative feeling. In this respect his "Pandora," a full-length figure about half life-size, is an exquisitely refined work, not perhaps so remarkable for mere physical beauty of figure as some which he has produced, but equal to any in refinement of painting, and with a lovely and expressive head also. His little work in the upper room, "a bather," is as far removed from the commonplace nudities which generally meet us under that title as anything could be. Admirable also are his two other works, a portrait of "Paul Lefebvre," a little boy with a very piquant face and costume, and "A Cardinal at Prayers" in St. Peter's, where the genuine devotion of the ecclesiastic is humorously contrasted with the perfunctory piety of his attendants and with the Pagan appearance of the marble Cupid and his wreathed decorations on the pier behind; this architectural portion is also admirably painted. There are other works which, with great talent, exhibit but too impressively the gross realism into which some of the ablest of French painters have fallen. M. Gerôme, who has we believe taken great personal interest in the exhibition, sends his "St. Jerome," which is really a very careful and powerful painting of a nearly naked old man, with all the decay of age in his shrivelled body pitilessly delineated; he lies on his back with his head pillowed on the body of the traditional lion; a halo of light encircles the head. The contrast between this little supernatural incident of the picture and the gross naturalism of the rest is almost comic in effect, but it is a painful and revolting comedy. The same feeling is even more strongly excited by M. Bonnat's "Job," in which we have the grand poetry of the history of Job reduced to the hardest and almost revolting prose. It is a pity to see such power of manipulation expended in a direction so opposed to the highest ends of painting, which surely should be to exalt and quicken our imagination of an ideal and tragic story, not to drag it down into the contemplation of the more revolting side of the supposed facts. There are other works which, neither so remarkable in execution (in some cases) nor so repellent in conception, are well worth attention. M. Meissonier's fine portrait of M. Dumas may be named among these,—a large work for Meissonier, a miniature in relation to the ordinary scale of portraits: needless to say that it is finished almost to perfection in every detail. M. Henner's portrait of "Madame X." and head of "A Sleeping Girl" on the same screen, are very good, and so is M. Robert Fleury's "Une Parisienne," a head and bust of a young lady remarkable for the beautifully soft and real texture of the flesh. M. Vollon's painting of "A Helmet" is a splendid piece of still life, and M. Protais has a very good battle-piece entitled "Waiting." The pencil drawings by M. Boulanger, designs for figures in the decoration of the Town-hall of the XIII. arrondissement, Paris, are admirable in their way, and show very fine and delicate drawing. We recommend a visit to the collection.

THE "BLACK-AND-WHITE" EXHIBITION.

THE fourth exhibition of works in Black and White at the Dudley Gallery is a very good and interesting one,—one of the best that we have seen recently. Some old contributors are very well represented, and some names of more recent repute seem to be steadily rising. M. Leon Lhermitte has for some years been one of the pillars of the exhibition, with his forcible studies in charcoal, and he has seldom sent anything better than his interior of a carpenter's shop, "Le Menuisier" (61). In a medium comparatively rough, and in some senses intractable, M. Lhermitte contrives to produce a great deal of finish in detail as well as broad and powerful effect of light. The expression and modelling of the faces of the two figures in this work are remarkable when the exigencies of the material are considered, and the manner in which a multiplicity of details and accessories are sufficiently made out, and yet kept in subordination to a broad effect of lighting, cannot be too highly praised. In addition to this, the same artist contributes an interior of a similar class, "L'Imprimeur" (99), not quite equal to the former, but very fine in its way; and also a remarkable study of a crowd of persons attending a lecture (apparently) in the "Cour de Philosophie à la Sorbonne" (123), in which the effective and individual treatment of a number of heads all directed towards a common object of interest, is the element of interest in the work.

The top of the room is partly occupied by a very large monochrome study in oil of the "Death of Jacob," by Herr Adolph Pichler, in which the attempt is made to individualise the figures of the twelve patriarchs (life-size) as they hear the last words of Jacob, quoted in full in the catalogue from the 49th chapter of Genesis. This is a work with a good deal of the merely academic excellence of German "high-art" in it,—good work in its way, but not very interesting or striking,—and we rather question the advisability of admitting such very large cartoons into a small exhibition like this, consisting of works the interest of which should be mainly in the idea expressed and in the manner of setting it forth. Whatever merits there are in this study might just as well have been shown on a much smaller scale, and with more agreeable effect when colour cannot be employed. Beneath this work the end wall is mostly occupied with specimens of book and periodical illustrations, appropriately grouped together as a class. The representation of the progress of this application of art is no doubt a legitimate object of such an exhibition, and there is considerable interest in studying a number of them collectively, and there are some very pretty, and a few striking, designs among them. But on the whole, the study of this part of the exhibition leads to the conclusion that the engagement to furnish illustrations to books has some kind of tendency to clip the wings of fancy and artistic imagination. Few of these works have the artistic interest and power which attach to the best work in other classes of the exhibits.

Among these latter it is always a pleasure to come across the etchings of Mr. J. H. Bradley, of which those exhibited here are chiefly from the neighbourhood of Venice. This artist thoroughly understands what etching can best do, and what are its limitations; all his etchings seem complete as far as the real powers of etching (in landscape) go, and there is never a line too much in them. Among the best in this style are "St. Niccolo del Lido" (22) and "Burano and S. Francisco del deserto" (496); in which latter, however, we may be allowed to observe that the distant campanile is carelessly drawn and out of the perpendicular, and that it might just as well have been straight. We could wish that we did not so often find architecture rather carelessly treated in works of this class. There is a little view of Westminster from the Surrey side by Mr. Arthur Severn (473), which is very good in effect, but the Victoria Tower is too narrow in proportion, and the Clock Tower has not the correct outline,—the oversailing of the clock stage is missed. These points are not trifling, because a good deal of the character of the mass of buildings at Westminster depends on the contrast of outline and proportion in the two towers. There are some good works in which architecture is a predominant element; Mr. Brewer has a fine picturesque invention under the title of "The Water-Gate,—a Composition" (570), there is a carefully-drawn view of "The Schöne Brunnen," at Nuremberg, by Mr. H. G. Branling (21), and an admirable interior "In the Aisles of Chartres" (389) by Mr. A. H. Haig.

Among landscapes (in which term we include sea-pieces) is a large and fine study in charcoal of "Wind-tossed Waves," by Mr. F. Powell. The etchings of Mr. Parrish, who is, if we mistake not, one of the more recent contributors, are all good examples both of etching and of landscape composition; they are very effectively composed without appearing as contrived effects. We can only mention briefly a few more which struck us. Mr. G. F. Glennie's sepia sea-piece, "Calm" (142); Mr. John O'Connor's "Old York-gate, Adelphi" (177), a careful architectural study, not excluding picturesque effect; Mr. Rixon's free and powerful sketch in lamp-black, "A Pool on the Common" (351); M. Courtry's brilliant etching after Munkacsy's equally brilliant picture, "Visite à l'Accouchée" (366); Mr. Fortescue's "Woman Sewing," one of the best figure-studies in the room (403); M. Rischgitz's "Autumn Evening, Valley of the Tay" (423), where the landscape is seen through a screen of the twigs and sprays of intervening trees; Mr. F. W. Lawson's "Pea-shelling" (442), one of a series of drawings of "The London Poor," and a very good one; M. Gauthier's "Le petit Bras de la Seine pendant la Glaces" (495); Miss Sarah Wadham's "Nellie," a very sweet female head; Mr. Sibley's moonlight scene, charcoal (519); M. Tissot's "First Breeches" (595), an amusing dry-point drawing of a little boy just indued in those *propria quæ maribus* garments; and the Princess of Wales's clever sketch of "Sandringham, Winter" (605). There are many other pleasant bits in the collections. Attention should be given to one or two specimens of the new school of American wood engraving, familiar to many readers through the illustrations of *Scribner's Magazine;* the proof from an engraving, "Winnifred Dysart" (65), by Mr. W. B. Classon, of Boston, is an admirable specimen of what can be done in the way of softness of texture and effect in this too often carelessly-used or misused medium of illustration.

THE STORING OF POWER: THE NEW BIRTHDAY IN SCIENCE.

We have more than once called attention to what we regard as the most important problem with respect to the future of mechanical motor power, viz., the transmissibility of what we must still, for want of a more appropriate name, call the electric fluid. Towards the solution of this great problem advance is doubtless being made, although we profess inability to understand how it is that the statements which we have formerly cited as made by Dr. Siemens and by Sir W. Thomson have not yet received that full elucidation which their primary importance demands. But concurrently with efforts to determine the transmissibility of electric force, experiments have been for some time in progress, and that not in one department of philosophical research alone, as to the means of accumulating electricity. Very recently there has appeared in the papers a detailed statement of a degree of success obtained in this respect as to which we have hitherto vainly waited to receive either verification or contradiction.

Great names, it is true, were cited in the account in question. But they were not given in the only manner which would render their weight irresistible, that is as signatures to the statement. That electricity can be accumulated is a fact as long known as the time of Franklin. But the mode in which the accumulation was described as having been effected in the case in question did not commend itself to our ready acceptance. A small box was described as containing a sort of voltaic pile, composed of lead, minium, and an acidulated tissue or membrane separating the two. As minium is red lead, and as the use of the acidulated diaphragm has hitherto been, not for the storing up, but for the excitement, of electricity, we have doubted how far the account to which we refer, even if anything but a hoax, could have been quite accurate. At last, however, and, by a remarkable coincidence, on the very centenary of the birthday of Stephenson, Sir W. Thomson has admitted the truth of the main statement as to the transmission to Edinburgh from Paris of a box containing four Faure batteries, composed of lead and peroxide of lead, in which electric force was stored to the amount of a million of foot pounds.

Silk, to a slight degree, and glass, to a very high degree, are the substances to which we have been accustomed to look as containers, or non-conductors, of electricity. In the Leyden jar, the inner metallic lining of the jar is charged with a certain dose of electricity, the presence of which, by induction, is thought to cause the exercise of a corresponding tension, of an opposite nature, in the external coating. A considerable part of the jar, as is well known, is not coated at all, so as to prevent the approach of the inner and outer coats within a distance for which the electric spark might be able to leap, the tension being determined. It seems to us extremely probable that a series of concentric Leyden jars might be so arranged as to hold a tremendous charge of electricity, which might, no doubt, be as readily produced by a dynamo-machine as by a galvanic battery. An accumulation of this nature, composed, not of jars, but of plates, is indeed well known to the physicist. It may not be so generally known that it has occurred that the charge has made its way through the glass, boring or fusing a hole in plate after plate, and thus automatically discharging a portion of the battery, and weakening the final effect of the remainder.

Accumulation of electricity, no doubt, takes place in the masses of floating vapour visible to us as clouds. The whole of the phenomena of the thunder-storm, which are by no means absolutely or even generally understood, are due to the accumulation of meteoric or atmospheric electricity in these vapours. But in this case there is ample space for repulsive as well as for attractive action; and even if we could produce, as is quite conceivable, clouds of steam, and charge them with dynamo-electricity, space would fail us to carry out any useful experiments. How far the division of vapours, in turn positively and negatively charged, by glass diaphragms, would answer, has not, so far as we are aware, been tried. But, as far as we are aware, there is far more difficulty in what we may call wire-drawing the electricity,—that is to say, making a suitable use of a volume of electricity of the highest tension,—than there is in either producing or storing up such a volume.

All previous speculations on this great physical problem are, however, controlled by the announcement now made by Sir W. Thomson. Of course it is easy to over-state what has been actually done, and what may be its immediate effects. Thus when a contemporary which is nearly alone among the morning papers in the fact that it speaks of scientific subjects with somewhat of the knowledge of the expert, says, "All the feverish excitement over the division of the electric current may now be set at rest," it mixes up entirely different questions and so far invalidates its own claims to attention. We do not think that the transmission of electricity, so to speak, by parcels delivery, is likely to be the form in which transmission will hereafter most conveniently and most economically be effected. It is rather as a proof of the command of accumulative power, than as the inauguration of a new method, that we ourselves regard the successful experience of M. Camille Faure. No doubt there are many cases to which such a moveable battery could be applied with the greatest advantage, provided it can be safely tapped, so to speak; as to which we have as yet heard nothing. The inconvenience of the Leyden battery is the instantaneous character of its discharge. This, we conclude, is modified in the *pile secondaire* of M. Faure, but we are as yet without distinct information on the subject. For a subaqueous railway, for example, such a portable boiler, to be applied to the locomotive, would be no small boon.

But even in such a case as this, it seems that we are making rapid advances towards a more perfect mode of transmission through metallic conductors. We hear by telegraph from Berlin that the electric railway between the Lichterfeld Station and the Central Cadet Institution has proved such a success that it has been decided to extend it, first to Teltow, and then to Potsdam. A practical difficulty has arisen as to this line, which is not insuperable, but which was not, so far as we are aware, anticipated. Horses are exposed to danger if they cross the rail that serves as electrode. Their iron shoes, no doubt, place them in the greatest peril. A horse fell the other day in Berlin from stepping upon the rail while the current was in circulation, and another was so much alarmed by the shock he received as to run away. The rails will have thus to be provided with wooden or other guards, to prevent contact except in the mode provided for the use of the line.

We have not doubted, and we do not doubt, that the substitution of the electric motor force for that of steam is merely a question of the accumulation and transmission of electricity. To this we ought to add, and of the distribution, division, or wire-drawing of the accumulated force. It seems to us that M. Faure has placed the first of these problems beyond the reach of doubt. What he has done opens up a great future. The second problem is now in course of solution at Berlin; and the third has recently received much illustration by what is called the Maxim system of electric lights. The three requisites go hand-in-hand. So far from advance in one of them rendering that in another unnecessary, it heightens its value. Thus, supposing the problems of accumulation and distribution to be satisfactorily solved, the minor powers of nature may be pressed into the ready service of man. A tiny streamlet, the current of air in a lofty chimney, even the wind that blows over the roofs of our houses, may be bidden silently and unrestingly to work tiny dynamic machines, storing up the power till it is required. It is far rather thus, than by transmission in a box, that we think M. Faure's accumulating pile is likely to become most practically useful.

And George Stephenson! Is his massive and national memory to be jostled aside by the names of Faure, of Siemens, of Armstrong, of Thomson? Most assuredly not. No more than the memory of William the Conqueror has been obliterated by that of the long line of his descendants who have mounted his throne, and kept the kingdom, though after a time they lost his dukedom.

> "Thy hair,
> Thou other gold-bound brow, is like the first,
> A third is like the fourth. . . . .
> A seventh? I'll see no more,
> And yet the eighth appears, who bears a glass
> Which shows me many more; and some I see
> That two-fold balls and treble sceptres carry."

Of this long and noble line, that of the kings of science and of industry, George Stephenson is not the first. But he comes very early in the series. Immediately preceded, perhaps, only by James Watt, his earlier predecessors were Pascal, Galileo, Archimedes, the engineer of Lake Mœris, the first builders of the pyramids. How far the goodly line is to stretch, prediction fails to note. That for the rude guiding staff of the Northumbrian peasant-king will hereafter be substituted the treble sceptre of twice-crowned science, we do not for a moment doubt. But each succeeding name only adds to the splendour of the founder of the dynasty. Without George Stephenson,—and let us add, in affectionate remembrance of the man, without Robert Stephenson,—we should have had no Armstrong, no Siemens, no Thomson. We have told in these pages, from our own personal reminiscences, how the electric telegraph sprang from the railway,—how the need of instantaneous communication between the railway platform at Euston and the engine-room at Camden-town set in organised motion the intelligences which finally matured the needle telegraph. We might, if time allowed, give other proofs of how far the whole great course of physical discovery is bound by golden chains to the footsteps of the first victors over the secrets of nature. But who is there to dispute it? Who is there who, in taking part in the efforts made, and worthily made, in times of peril and of dread like the present, to commemorate the birthday of George Stephenson in the manner which that hardy son of the soil would himself have preferred,—that is, by the establishment of industrial, practical scholarships bearing his name,—is not setting his hand to the creed that declares the immortality of science; and that anticipates in distant years a period in which the mightiest forces of nature shall crouch submissive to the hand of man?

HOMES AND HAUNTS IN THE MARKET.

COWPER'S HOME AT WESTON UNDERWOOD.

Amongst the "English shrines" frequented by American pilgrims, few obtain greater honour than the two houses occupied in succession by the poet Cowper at Olney and at Weston; and as the estate of which the latter forms part is now for sale, we paid it a visit the other day in order to behold it with our own eyes, before some great change has passed over it. We were not disappointed.

A journey of little more than an hour and a half by the Midland Railway deposited us with a fellow-pilgrim one bright morning in this June at Olney, a little town on the northern extremity of Buckinghamshire, well known as the abode, a century ago, of John Newton and Cowper, who there composed jointly the "Olney Hymns." A short walk across a meadow and a lane brought us into the High-street, which widens out gradually at the top into a spacious market-place, the chief features of which are a single elm, carefully railed in, lest its shade should be utilised, and "plump in front" a tall house of red brick, with a triple row of eight windows in front. This was Cowper's home for nearly twenty years. In this we were shown the poet's sitting-room on the left,—now a *magazin de modes*, and filled with ladies' dresses in various stages of progress; on the right is a small parlour, which, we are told, forms part of the entrance-hall, in which Cowper's tame hares would frisk and gambol. In the rear,—now, however, cut off from the house,—are the garden, in which he would walk arm-in-arm with Mrs. Unwin; the house in which he reared his hares; and his own little summer-house, in which he would sit daily for hours and hold sweet converse with Newton and other members of the "Evangelical" school. The summer-house is still kept in precisely the same state in which it was left, and its whitewashed walls are covered from end to end with the autographs of pilgrims from all parts of the world, Hugh Miller, Elihu Burritt, and, we were told, Macaulay among the rest. The house belongs to Mr. W. H. Collingridge, of London, who has a fine collection of relics of the poet.

But we must hasten on to Weston. We leave on our left the tall spire of Olney Church, in which, we are informed, is the pulpit in which Newton, and Scott "the Commentator," used to preach. We next get a glimpse of a stone bridge, of six or eight arches, spanning the river Ouse, and a large expanse of meadows, which must be almost always flooded in the winter. Near this, at Lavendon Mills, was the row of Cowper's favourite trees, and a rustic summer-house, which he has immortalised in verse,—

> "The pop'lars are fell'd, farewell to the shade,
> And the whispering sound of the cool colonnade."

The bridge, too, lives in Cowper's poems.

Witness the opening lines of his "Winter Evening," in "The Task":—

"Hark! 'tis the twanging horn on yonder bridge,
That with its wearisome but needful length
Bestrides the wintry flood."

As we bear to the right, to take the road to Weston Underwood, the road gradually rises, and we find ourselves on a little inland cliff, from which we look down upon the Ouse in its many pleasant windings among the green meadows. That bend near the little wooden bridge is the spot where Cowper's favourite spaniel, "Bean," jumped into the stream and fetched to his master's feet the lily which is for ever associated with Bean's name in verse.

A long mile of hot, white, dusty road is before us, and we espy straight before us the tower of Weston Church, rising from out of a group of red-tiled cottages and dark-green trees. Between it and ourselves is what seems a large mansion. Our guide tells us that it is only the stables of the old manor-house of the Throgmortons, and that the park close by them, though on the other side of the road, forms the pleasant grounds which the kindness of the Throgmortons threw open to Cowper when his sensitive nature required some such retreat in which to walk, to rest, and to be thankful.

We pass on a quarter of a mile. On our right is a little copse, or, as the natives here call it, a "spinny." It is mostly composed of hazels, and we can scarcely thread the walk through it on account of the thick tangle of the brake on either side, which apparently has been left uncut for many a long year. But this spinny is "sacred ground." It was the scene of, at all events, one picnic, which Cowper dignifies by the name of a *fête champêtre*, in July, 1781, at which Lady Austen, Mrs. Unwin, and the poet were present. He writes,—"A board laid over the top of the wheelbarrow served us for a table; our dining-room was a root-house, covered with moss and ivy." At the upper part of the spinny the hazels give way to fine beeches and yews, and the stile in which the path ends brings us into a meadow, celebrated by Cowper in "The Task" as lying below a cottage, or small farmhouse, known as the "Peasant's Nest." It is thus named by Cowper, who gives a picture of it:—

"Once I went forth, and found, till then unknown,
A cottage, whither oft we since repair:
'Tis perch'd upon the green hill-top, but close
Environ'd with a ring of branching elms,
That overhang the thatch, itself unseen
Peeps at the vale below: so thick beset
With foliage of such dark redundant growth,
I call'd the low-roof'd lodge 'The Peasant's Nest.'"

The poet adds that he coveted this little spot for its retirement, in spite of the fact that its peasant owner had to fetch his supply of water with difficulty from a ditch in the meadow below, and to wait for the call of the unpunctual baker. We fancy that the "Nest" would soon have lost its chief attraction for one who, in spite of his love of country scenes, could write "Society for me!"

We skirt this little "nidus,"—for such, indeed, it is,—and find ourselves in another shrubbery, with a wider and more formal path, in which the yew, the ash, the beech, and the elm predominate, and in which there still stands a desolate summer-house. Here, again, the ground is consecrated to the Muses, and every step that we take is minutely described in the "Task":—

"Not distant far, a length of colonnade
Invites us; monuments of ancient taste
Now scorn'd, but worthy of a better fate.
Our fathers knew the value of a skreen
From sultry suns, and in their shaded walks
And long protracted bowers enjoy'd at noon
The gloom and coolness of declining day."

Here the green pathway trends to the left; we are on high ground, and can see that we are gradually making the circuit of what once was the park of the Throgmortons. We pass through lines of chestnuts and beeches, which are disposed with almost such regularity as to form a succession of avenues. It appears that at one time these were sentenced to be cut down:—

"Thanks to Benevolus; he spares me yet
Those chestnuts ranged in corresponding lines;
And, though himself so polish'd, still reprieves
The obsolete prolixity of shade."

A little further, and we find ourselves on the brink of a somewhat steep declivity, at the foot of which generally runs a little brooklet, though it is dry in summer, crossed by a rustic bridge. This is described by Cowper to the very letter:—

"Descending now (but cautious, lest too fast)
A sudden steep upon a rustic bridge,
We pass a gulph, in which the willows dip
Their pendent boughs, stooping as if to drink.
Hence, ankle deep in moss and flow'ry thyme,
We mount again, and feel at every step
Our foot half sunk in hillocks green and soft,
Raised by the mole, the miner of the soil."

The above lines were written about the year 1780. It is, perhaps, worthy of note that, on this very spot, a century later, we found the mole still at work raising hillocks, and we carried back in our pocket a dead specimen of that soft-coated little creature, intending to have its skin made into a purse, to be cherished in memory of Cowper. At all events, our "find" will serve to show how little the leading features of the country change.

The ground now rises; we pass on between another row of venerable elms; and a hundred yards or so before us, a little to the left, we descry a rustic summer-house. In the "Task," which is our companion, it is thus described:—

"The summit gain'd, behold the proud alcove
That crowns it! Yet not all its pride secures
The grand retreat from injuries impress'd
By rural carvers, who with knives deface
The panels, leaving an obscure rude name.
So strong the zeal to immortalise himself
Beats in the breast of man."

He might have added, "of woman too"; for side by side with the names of John Smith and William Hodge are carved those of Mary Jones and Sarah Brown, and the names written by the "unlettered Muse" in pencil are far more numerous than those "carved" with the penknife. Some of the autographs here are old enough to have been read by Cowper's eye. The view from this alcove is charming, and charmingly pictured to the very letter:—

"Now roves the eye,
And, posted on this speculative height,
Exults in its command. The sheepfold here
Pours out its fleecy tenants o'er the glebe."

On our right is a rural lane, with broken gates and dilapidated stone walls:—

"There, from the sunburnt hayfield, homeward creeps
The loaded wain: while, lighten'd of its charge,
The wain that meets it passes swiftly by,
The boorish driver leaning on his team."

The prospect is thus minutely described:—

"Nor less attractive is the woodland scene:
Diversified with trees of every growth,
Alike, yet various. Here, the gray smooth trunks
Of ash, or lime, or beech, distinctly shine,
Within the twilight of their distant shades;
There, lost behind a rising ground, the wood
Seems sunk, and shorten'd to its topmost boughs.
No tree in all the grove but has its charms,
Though each its hue peculiar; paler some,
And of a warmish gray; the willow such
And poplar, that with silver lines his leaf,
And ash, far stretching his umbrageous arms;
Of deeper green the elm; and deeper still,
Lord of the woods, the long-surviving oak.
Some glossy-leaved, and shining in the sun,
The maple, and the beech, of oily nuts
Prolific; and the lime, at dewy eve
Diffusing odours; nor unnoted pass
The sycamore, capricious in attire,
Now green, now tawny, and ere autumn yet
Have changed the woods, in scarlet honours bright."

We now come to a sharp turn, and a still sharper descent, at the foot of which we cross a ditch, now dry, but which shows signs of running high in winter. The poet again is our interpreter:—

"Hence the declivity is sharp and short,
And such the re-ascent; between them weeps
A little Naiad her impoverish'd urn
All summer long, which winter fills again."

The statue to which Cowper allades is gone, but the base of its pedestal remains. Before us the turf is broken, apparently covering the *débris* of a fallen wall. Here Cowper again is elaborately true:—

"The folded gates would bar my progress now
But that the lord of this enclosed domain,
Communicative of the good he owns,
Admits me to a share."

We enter another avenue; some of its trees still stand, but many are gone; some evidently had perished even in Cowper's time:—

"Refreshing change! Where now the blazing sun?
By short transition we have lost his glare,
And stepp'd at once into a cooler clime.
Ye fallen avenues! Once more I mourn
Your fate unmerited; once more rejoice
That yet a remnant of your race survives."

Remarking to our fellow pilgrim that we had never seen an avenue of trees more beautifully arched and interlaced, adding that it reminded us of the nave or side aisle of a cathedral, our friend read on thus:—

"How airy and how light the graceful arch,
Yet awful as the consecrated roof
Re-echoing pious anthems. . . . .
So sportive is the light
Shot through the boughs; it dances as they dance,
Shadow and sunshine interminglingquirk,
And dark'ning and enlight'ning, as the leaves
Play wanton every moment, every spot."

At the end of this avenue we are confronted by gates and a ha'ha, and find ourselves in an old-fashioned "pleasaunce," surrounded by evergreens, which spring out of velvet turf. On our right is a statue of Homer, with an inscription, which, as our volume tells us, is from Cowper's own pen; and also another summer-house, or "colonnade." Here we get a view, through the shrubs, of the barn-doors near the stables of the Manor House. Here Cowper, again, was at hand as an interpreter:—

"And now, with nerves new braced and spirits cheer'd,
We tread the Wilderness, whose well-roll'd walks,
With curvature of low and easy sweep,
Deception innocent, give ample space
To narrow bounds. The Grove receives us next;
Between the upright shafts of whose tall elms
We may discern the thresher at his task.
Thump after thump resounds the constant flail,
That seems to swing uncertain, and yet falls
Full on the destined ear. Wide flies the chaff;
The rustling straw sends up a frequent mist
Of atoms, sparkling in the noonday beam."

In this Wilderness, as he tells us in one of his Letters, he and Mrs. Unwin were strolling with the Throgmortons, when suddenly they were surprised by a pack of hounds, which killed the fox almost at their feet. But the poet's letters are full of allusions to every spot that we have mentioned.

We have now made the circuit of the estate, some 1,000 acres, and find ourselves once more close to the road which we had left on entering the spinny. The roadway is guarded on either side by the stone piers of large gates, which, if we may believe tradition, were not often closed, except to assert a right of so doing. On the opposite side of the road stand the stables and outbuildings of the Manor House, which was pulled down some fifty years ago. It was a low building, stuccoed over, and crowned with a high-pitched roof, in which was a large upper room that had served for three centuries as a Catholic Chapel for the tenantry of the Throgmortons, who always clung to the old faith. When the house was pulled down, a new chapel was built at the end of the old stables, and the missionary priest who "serves" it occupies two of the coachman's or housekeeper's rooms. In his garden is kept Cowper's own sundial, which he brought with him into this quiet retreat just fifty-five years ago. The sunny terrace on which it stands is shaded on one side by junipers and other pleasant trees, and commands a fine view over the meadows, almost reminding us of an Italian scene.

We leave, however, this pleasant scene, and saunter up the village street towards the church. Having refreshed our outer man with a draught of ale at the "Cowper's Oak," we reach on our right "The Lodge," which was occupied by the poet for five or six years before quitting the Midlands for East Dereham, where he died. It is a pleasant and cheerful residence, and might well pass for the vicarage. The rooms are still kept almost in the same state in which they were when tenanted by the poet, and by his kind friend, Mrs. Unwin, and graced by the occasional presence of Lady Hesketh and his other cousin, her sister. Here he wrote a great part of "The Task" and of his "Table Talk," and many of his pleasantest short poems. Here, too, he translated a great part of his beloved Homer, whose statue we lately visited in the "Grove." His sitting-room downstairs and his bedroom on the first floor are still shown. On a shutter in the latter is a couplet written in pencil in the poet's autograph, expressing his regret at leaving Weston, in July, 1795, and his belief that he should never return to it,—

"Farewell, dear scenes, for ever closed to me!
Oh! for what sorrows must I now exchange you!"

Nearly opposite is a house once occupied by the Rev. Thomas Scott, the Commentator, when in charge of the village of Weston. Here Cowper must have been often a visitor in order to discuss the deep question of God's foreknowledge. "Oh! that those walls had language!"

About a hundred yards further on, at the extremity of the village, is the little church of Weston Underwood, in which Cowper sat Sunday by Sunday as a willing listener to Scott's Calvinistic sermons. The pews are still standing just as they were a century ago; for, happily the fabric of the church has not been "restored." At the end of the south aisle is a large marble monument erected to the memories of sundry members of the Throgmorton family, and on the south wall of the church hang the helmet and crest and "tabard" of a soldier of the Plantagenet or Tudor times, on which Cowper must often have gazed:—

"The good knight's dust,
His sword is rust,
His soul is with the saints, we trust."

But the day is drawing to a close, and we must

retrace our steps to Olney. As we do so, we read aloud the following extract from an autograph letter of Cowper, which refers to some spot on the very road that we tread. It is addressed to his friend, Samuel Rose, and is dated from "The Lodge," Weston, Saturday, Feb. 5, 1791. "Your very handsome present of Pope's Homer has arrived safe, notwithstanding an accident that befel him by the way. The Hall servant brought the parcel from Olney, resting it on the pommel of the saddle, and his horse fell with him. Pope in consequence was rolled in the dirt, but being well coated got no damage. . . . . I have found a place for him in the parlour, where he makes a splendid appearance."

The estate of Weston is placed in the hands of Messrs. E. Smith & Co. for sale by private contract; in default of which it will be put up to auction before the end of the summer.

DECORATION AS APPLIED TO ARCHITECTURE, FROM A PAINTER'S POINT OF VIEW.*

I HAVE been asked to write a paper on a subject about which so much has been written, and well written, that it is almost impossible to say anything new about it; but perhaps, when looking at the subject from my own (a painter's) point of view, I may be able to say something which may be of interest to you as architects. It is unfortunately out of my power to speak of any of the earlier work, such as is to be found at Assisi, Perugia, and other towns north of Rome, but in Rome itself and the surrounding neighbourhood we can examine the later work at its perfection and the commencement of its decline better, I should think, than anywhere else. In the Vatican, too, we have the advantage of being able to study entire rooms left almost, if not quite, as they originally were; and, as I am unable to give drawings in illustration of what I say, it will be an advantage that most of what I speak of is, to a certain extent, familiar to all of us.

I will divide what I have to say under the heads of Arrangement, Scale, Colour, Construction, Relief, and Material.

Arrangement.

To commence, then, with the Vatican. In the roof of the Sistine Chapel the main subjects of the flat of ceiling are placed lengthwise across the ceiling, so that to look at each and all of them it is necessary to face the altar; but these subjects are surrounded by the single figures of the Prophets and Sybils, and groups in the cove, so placed that whichever way you may be looking at the ceiling you must see one or more of them the right way up. Even with this marvellous work before me I cannot help wishing that it was on the walls instead of the ceiling. It seems to me that anything requiring very much study from spectators is out of place on a ceiling, and that important figure subjects, if introduced at all, should be so arranged that they can be easily seen and taken in at one view, while the main subjects should be on the perpendicular surfaces of the walls, where they can be seen and studied without difficulty. In this case more particularly do we wish to study carefully every square foot of the painted surface, for this wonderful work is, or should be, one may say, a standard of excellence in design and style for painters of all time.

The ceilings in the *stanze* of Raffaelle vary much in excellence; and the later ones, in the designs of which he can, I fancy, have taken but a small share, if any, show very plainly that the decadence had commenced. In the *Camera della Segnatura* the ceiling is beautifully arranged, so that the centre compartment can be seen whatever the position of the spectator underneath, and also one or another of the four compartments containing the large well-known figures representing Theology, Philosophy, Poetry, and Jurisprudence.

This ceiling is much better divided and arranged than that of the next room (the Heliodorus), which is not so well balanced. Having taken a circle, divided into four, as the main division of the ceiling,—the room not being quite square,—the extra spaces at the shorter sides of the room have to be in some way filled up, and in this case these spaces have been made unnecessarily wide. It seems as if this had been done in order to get more space for the small figure-subjects in grisaille; whereas, by another arrangement, there would be a much smaller space left, which in the former room is done, and is filled up with a running ornament. This seems to me much better in effect than the cutting up into so many small spaces for the grisailles.

A very good instance of the inconvenience of a large picture on a ceiling is to be seen in the last room, the Sala Constantino, where the centre compartment of the ceiling is occupied by a large picture which can only be seen from one place. This is also the case with the much over-praised "Aurora" of Guido, in the Rospigliosi Palace, and countless other ceilings in Rome of the late period. The top of the ceiling of the Sala Constantino is more depressed in section than that of the Sistine Chapel, which is, I believe, a flat semi-ellipse. A large picture in the centre of such a ceiling, with no reason for the spectator being in one place more than in another, is surely wrong, whilst in the case of the ellipse, though almost equivalent to a flat surface at the top, it would be rather more allowable; and Michelangelo has made the most of the perpendicular portion, by carrying up the figures at the sides right into the curved part, and not improbably for this reason. Here, also, the spectator is always supposed to be facing the altar, and is not intended to see the ceiling unless so doing. It seems to me, then, that the pictorial treatment of a flat ceiling is not advisable.

It appears to me that in this respect the French painters of the present day are entirely wrong. They go in very much for the pictorial decoration of ceilings in a florid manner, continuing the Italian traditions of the late period, apparently basing their work upon that of the Cavaliere d'Arpino, about the middle of the seventeenth century, and others of that time.

One of the subjects of design always given to a French student of painting at the Villa Medici, which he has to send home in the year, is the decoration of a ceiling. It has never obtained much here, and instances are comparatively rare of ceilings treated in this manner.

The secret of the fitness of a certain treatment for a certain place in a building seems to lie very much in this,—that the higher the constructive value is of the space to be decorated, the more severe and conventional should that decoration be,—if decorated at all. The decoration is intended for those parts not so structurally important. Where the ceiling is quite plain and unpanelled, the decoration should be very evenly distributed; where the ceiling is panelled, or otherwise divided, those spaces, such as the panels, can be decorated more pictorially than the more constructive parts, such as the mouldings or the borders inclosing the panels. There are numerous examples of this in the work of the best time. Pinturicchio's ceiling in the choir of Santa Maria del Popolo (which has been published by the Arundel Society) illustrates this very plainly, as to the *stanze* of Raffaelle. A similar principle is well illustrated by the "*grottesche*," or modelled reliefs in *gesso*. At the Villa Madama there are some lovely examples of this mode of decoration. It seems to me that it might be made much more use of in England than it is at present. I do not think it need necessarily be expensive; a great deal of the best at the Villa Madama seems to have been executed by pressing a mould on to the wet plaster, and slightly modelling on it, if necessary, afterwards. There can be no reason why it should not be used with a more severe style of architecture, if treated with more reticence than it is here. And I fail to see why, when good designs have been made by good artists, that they should not be repeated again and again. Formerly, if a design were really good, people saw no reason why it should not be used again under different circumstances. Now, it is usually the bad examples which are reproduced *ad nauseam*. Nowadays I dare say there would be an outcry if a well-known artist were to design stuccoes for a house, say in Park-lane, and make use of some of them again in decorating a house in Prince's Gate. These stuccoes were made much use of by Giovanni da Udine and others of that time. When on a wall panel there is no reason why they should not have considerable relief, or on a spandrel or place not so constructively important as, say, in an architrave or panels of a pilaster.

The same principle seems to run through the whole,—that the more essentially constructive a part of a building is, either in reality or even in appearance, the more severely and conventionally it should be treated as regards its decoration. This can be seen very well in Raffaelle's Loggie in the Vatican, though in some respects he has gone contrary to the law by decorating the side pilasters with flowing and undulating arabesques, which take all firmness and stability away from them, and at once cause them to lose their constructive value,—in this case a real one. In earlier work a pilaster is never treated in this way, either in painting or sculpture; it usually has a line running perpendicularly down it through the ornament, which gives the requisite suggestion of strength, and the ornament is always more severe and has less relief than in other places. There are good examples of this in Santa Maria del Popolo, surrounding the windows in a chapel painted by Pinturicchio. The ornament is low in relief (in marble), and flowing round the curved top of the window and at the bottom, whilst at the sides it is perpendicular in its *motif*, and has a stem, as it were, running down all through it, which gives it stability. I noticed in one of the flat pavement tombs, of which there are some good examples here, that a border was treated in this way, having a very unpleasant effect on the horizontal surface, and particularly when I happened to see the tomb upside down. Surely when this is to be seen from any point, and is itself horizontal, it should be treated with running ornament, or ornament like what might be found on a moulding, and not with that which is expressive of a perendicular *motif*. On the other hand, there can be no objection to such a treatment in the frontispiece of a book, as we see in so many of Holbein and his school, for in this case it is to be seen only from one point of view, and there can be no objection to an upright treatment.

Scale.

The effect of all the *stanze* is much marred by hideous yellow figures and caryatides on the dado, which throw the pictures out of scale by their enormous size. On the other hand, I do not object (that is to say, as regards scale) to the medallions on the dado or the smaller figures on the ceiling; they do not seem to interfere with the rest. I believe that many architects would say that such combination is absolutely wrong, and that all the figures, both on the ceiling and the walls, should be to exactly the same scale. This I entirely disagree with, as it limits so very much the use of figure subjects, and I do not see the necessity for it. What seems to me necessary is that all figures of the same rank,—occupying, that is, equally important places on the walls or ceiling,—should be to one scale, while those of another rank may be to another scale; according to their importance in the scheme, so should be the scale of the figures, and those very far from the eye should not be to too small a scale, so that everything may be seen clearly.

The scale of the figures in the "School of Athens" and the "Disputa" appears to be a little less than life. As regards scale, I think that, as a rule, even in good Renaissance work, they are far too apt to put elaborate small work in places where it is quite lost, and is often injurious to the general effect. This seems to be particularly the case with the stucco-work before mentioned. At the Villa Madama there is much beautiful work placed very high up on the domed ceilings, especially some very exquisitely proportioned and modelled female figures, and some extremely beautiful arabesque borders, which have no business there; they should be where they can be seen. This is also the case very much at the old palace called "Papa Giulio," about half a mile out of Rome, beyond the Porta del Popolo, which has some extremely fine stucco-work,—very fine in design, especially a frieze in one of the principal rooms, in which *amorini* are combined with foliage, forming a most lovely decoration. This question of scale is rather a vexed one, and artists differ very much about it.

If we are to carry out the principle I first mentioned of making all the figures to one scale, we might have to go even farther, and make every object introduced in the decoration round to fit scale with the figures, which surely would tie the artist down most unnecessarily.

In the case, for example, of an altar-piece in several compartments,—very often three,—the three would be to the same scale, while there would very likely be smaller pictures to a different scale below in the predella, illustrating different episodes probably in the life of the

* By Mr. R. Corbett. Read at the meeting of the Architectural Association on the 10th inst., as elsewhere mentioned.

saint. Were the artist restricted to one scale he would be debarred from this; and, if he had smaller compartments at all, would be obliged to fill them with ornament only. It was suggested to me, as a likely reason for putting small work so high (as I mentioned was the case at the Villa Madama and elsewhere), a desire to increase the apparent size of the vault, and it looks as if it might be so. On the whole, I think the Villa Madama superior to Raffaelle's Loggie; it is not quite so overloaded with ornament, and the stuccoes are extremely beautiful both in design and execution.

Colour.

Even distribution, and the most perfect balance of colour, is what Raffaelle has carried to perfection in the "Disputa." The gilt parts are few, only up at the top of the picture, where they combine with the richness of the gold ground on which the greater part of the ceiling is painted. Even the Host on the altar, and the rays from the Dove above it, are painted, not gilt; also the ornament on the altar-cloth. Were these gilt, they would glitter and destroy the breadth of effect; also, the parts which Raffaelle has gilded are at the top of the picture, where they get no direct light, and, in consequence, do not glitter, but only look rich, and gradually lead up to the still greater richness of the ceiling. In the ceiling, the gilt ground of the pictures (not of the framework in which they are set) is lined over with a rich brown, giving the effect of mosaic; it prevents the larger masses of gold from predominating, and has a very pleasing effect. In the smaller subjects the mosaic divisions are reduced in scale to suit the size of the figures. Even in ornament I doubt the expediency of using gold in places very well lighted, as in its application it is often difficult to determine when and where to stop. If a fresco is surrounded by much rich work, it seems necessary that it should have, perhaps, in itself much gilding; but it is very likely to lose rather than to gain by such surroundings, and in order to stand against rich marbles, gold, mosaic, and the like, if it would not be thrown quite into the shade, it must avail itself of such a resource as gilding. I often feel that, even in the good old work, the gilt parts of a fresco tell as spots, and injure the breadth of effect, even when very evenly distributed. This can be seen in the frescoes in the Sistine Chapel below those of Michelangelo, by Luca Signorelli, Botticelli, and others, though in this instance the gold is used only in thin lines and patterns on the dresses. I fancy nothing harmonises really well with mosaic except a wealth of rich marbles of varied colour; and as we in England can seldom get these in any quantity, I fear it is an argument against the very general use of mosaic,—at any rate, that with much gold in it,—though, on the other hand, it has great advan ages for our climate, as, besides being so permanent, it looks well in a low light.

As regards the general effect of a painted wall decoration, it should, I think, not be too dark, because it has no gold frame like an easel picture to isolate it; and, for a similar reason, white should never be too high in key. The latter would also give an unsubstantial look, as it suggests a hole in the wall with light seen beyond. For these reasons I think a middle tone is the most suitable, but it would be better to be too light than too dark of the two. In the Convent of St. Mark, at Florence, Fra Angelico has represented many monks in black dresses, but he never paints them black, or anything really approaching it, not because he had not the means or was unable to do it, but evidently because he felt it was unsuitable.

White is often used by Pinturicchio in his ceilings with particularly happy results. It is always very low in tone, but even then it is the most prominent of the colours in effect, and is always used when he wishes to emphasise a moulding or line round a medallion, to isolate it from the ground on which it is placed. I must repeat again what I said about the use of gold; if used in shadow it always looks well and rich, and helps other colours, especially blue and red, very much. Pinturicchio uses it with great success in bands of ornament in deep shadow on the ceiling mentioned before, but he never seems to use it in any quantity when in light.

Construction.

All through the *stanze* one meets with a great deal of what I cannot but think misplaced decoration. In the so-called "Disputa" the pilasters at the sides drawn in perspective are a great mistake, and I cannot see the occasion for them; the perspective of the pavement gives quite enough perspective to the picture. The ornament round the top of the picture is also in perspective. I am sure that the whole would gain if this were more conventionally treated, and the painted mouldings dividing the panels of the ceiling might perhaps be treated rather more flatly, as in many cases they have the appearance of real mouldings. This applies to a certain extent to the ceiling by Pinturicchio, in the choir of S. Maria del Popolo, where the painted mouldings are in some cases very deceptive. There are strong cast shadows from the pilasters (painted) of the niches containing the figures of the four Fathers of the Church in the pendentives, which have a very unpleasant effect, as it strikes the observer that such niches could not possibly exist in such a position, and it makes them look as if they would fall forward at any minute. This realistic treatment is surely an error. Had the cast shadows not been insisted on, there would have been no objection to the painted architecture, as it would then have become merely a symbol, and a means of dividing up the space. This ceiling has been very much restored not long since, and I think that much of what we now see is due to other hands than those of Pinturicchio. This painted architecture is to be found in all the *stanze* and on the roof of the Sistine Chapel, and we have all heard much said against it in these days by architects; but surely there can be no reason against dividing a ceiling beautifully by means of an imaginary architectural construction and decorating the spaces so made, so long as (and this is the important point) the architecture is treated as painted architecture, and not carried so far that by means of strong cast shadows and very forced perspective it is made to look as if it formed part of the actual construction of the building decorated. There are few things more annoying than looking up at a ceiling and fancying that you see the groining of a roof, and discovering, on closer examination, that it is only painted. On the other hand, I fail to see why a ceiling should not be divided as if by groining correctly designed, supposing the construction to be actually vaulted. If it be treated quite flatly, and merely as a means of separating one portion of the vault from another, all these representations of architecture should be definite representations; there should not be for a moment a doubt in the mind of the spectator that what he sees is not a real moulding, but a painted one; and were these mouldings treated carefully, they need deceive no one. I feel pretty sure that in the case of Pinturicchio's work in S. Maria del Popolo, what we now see of strong cast shadows and other resources for realistic effect is due to other and later hands. Almost all his work in this church has been much injured by so-called restoration, and the great thing seems now to be to make a thing look like what it is not. Formerly in Italy, and doubtless elsewhere, a brick house was covered with stucco, and marked so as to look like stone; now they cover them with stucco, and then paint and mark them to make them look like brick again.

In the case of the Sistine Chapel, the figures are so solid and so wonderfully real that Michelangelo may have felt it was necessary to make much of his painted architecture in order to support his figures, and consequently has made it stronger in relief than would, perhaps, have been justifiable in the case of figures less wonderfully solid and in every sense large. Each niche in which a prophet is seated has its own vanishing point, so that there can be never any question as to the reality or non-reality of the representation. But, on the whole, I am inclined to say that it would be better not to represent, in a purely decorative way on a surface, things which might themselves in reality be there.

False construction and bad taste are carried to an extreme excess in the Sala Constantino, which is later in date than the other rooms. We find the huge picture of the battle of Constantine painted on the main wall, with edges painted so as to look as if the picture were painted on a curtain, with a fringe at the bottom, and the top edge shown as if suspended from rings, though the artist has not gone so far as to carry the folds which must necessarily ensue down into the picture, which, if consistent, he would have done. What is so objectionable in this last room, with regard to the painted architecture, is that what is painted in order to represent say a pillar or pilaster, either to divide a space or to emphasise construction, often forms part of the actual picture as well. So what he has really done is to jumble the whole thing up together: architecture painted so as to represent real architecture, architecture painted so as to form part of a picture, and architecture professing to serve both these ends forming part of a picture, and forming part also of the construction of the room; and each and all represented in an equally realistic manner. But this is a supremely bad example of the style, and I think it should be borne in mind that in this style of the Renaissance, both early, middle, and late, the architecture is often responsible in a measure for the decoration, and much that is admissible in late Renaissance decoration would not be admissible in a purer style.

The indifference to construction seems to be almost a principle of a great deal of Renaissance architecture, and in direct contrast to the Gothic principle (which is more in favour now) of showing on the outside, as far as possible, the construction and arrangement that is within. No wonder, then, that the decoration assumed a similar licence, and false construction became a canon of art decorative as well as architectural.

What is so beautiful in Renaissance decoration is the design of the detail and the execution and finish of the work, often wrongly distributed, often put high up in places where it cannot be seen, often divided up and injured by the excessive amount of it, but usually lovely in *motif*, and generally (at any rate in most of the examples I have seen here), exquisite in execution.

Relief.

It is the fashion with some architects of the present day, when they have figure decoration to design or superintend, to insist on having it in flat tints with dark outlines. In some cases, no doubt, it is want of funds which makes this a necessity if the decoration is to be of figures, but to assume it as a principle of good decoration is surely a mistake.

The early painters of the twelfth and thirteenth centuries did not make all their figures flat because they thought it right, but because they were unable to make them round and solid; and it is easy to trace the effort to attain solidity and roundness through all the best art of Italy right up to the sixteenth century. The beauty of these early pictures consists in no way in their flatness, though I have often heard work of this kind praised by architects for its decorative fitness because it was flat. The flat tint and dark outline is only a concession to want of funds, or inability to produce work demanding so much more time and skill. Of course the amount of relief required depends on what the decoration is, what place in the whole scheme of decoration it occupies: if on a place of very evident constructive value it should not (as before mentioned) be in very strong relief; but in a case of this kind the sort of decoration employed would and should preclude this being possible.

The more important parts constructionally of a building (following the principle discussed when speaking of construction) certainly demand less relief than those spaces less necessary to the construction. For instance, a pilaster will bear less relief (not only relief represented by means of colours on the flat surface, but relief modelled, as in stucco or marble) than will a spandrel. As rounded forms are shown off more in a side light than a front or a diffused light, the relief of the stucco must be treated accordingly. A very good effect seems to be obtained in many instances by incising a line, especially if it be upright in its general direction; this will always tell in a diffused light. The Elgin frieze is a very good example of a similar treatment. It was intended to be seen in a diffused light, and the whole treatment is very flat, the outline being every now and then insisted on. Of course, when much relief is used in a decorative treatment of stucco, it must be supported by much greater strength and width of mouldings.

Material.

A final word on the subject of the materials for decorative purposes. Of course, from my point of view, fresco is, *par excellence*, the material, and it is a great pity that it is not more used in England. I do not mean that it should be used only for the production of important pictures, which seems to be the only use to

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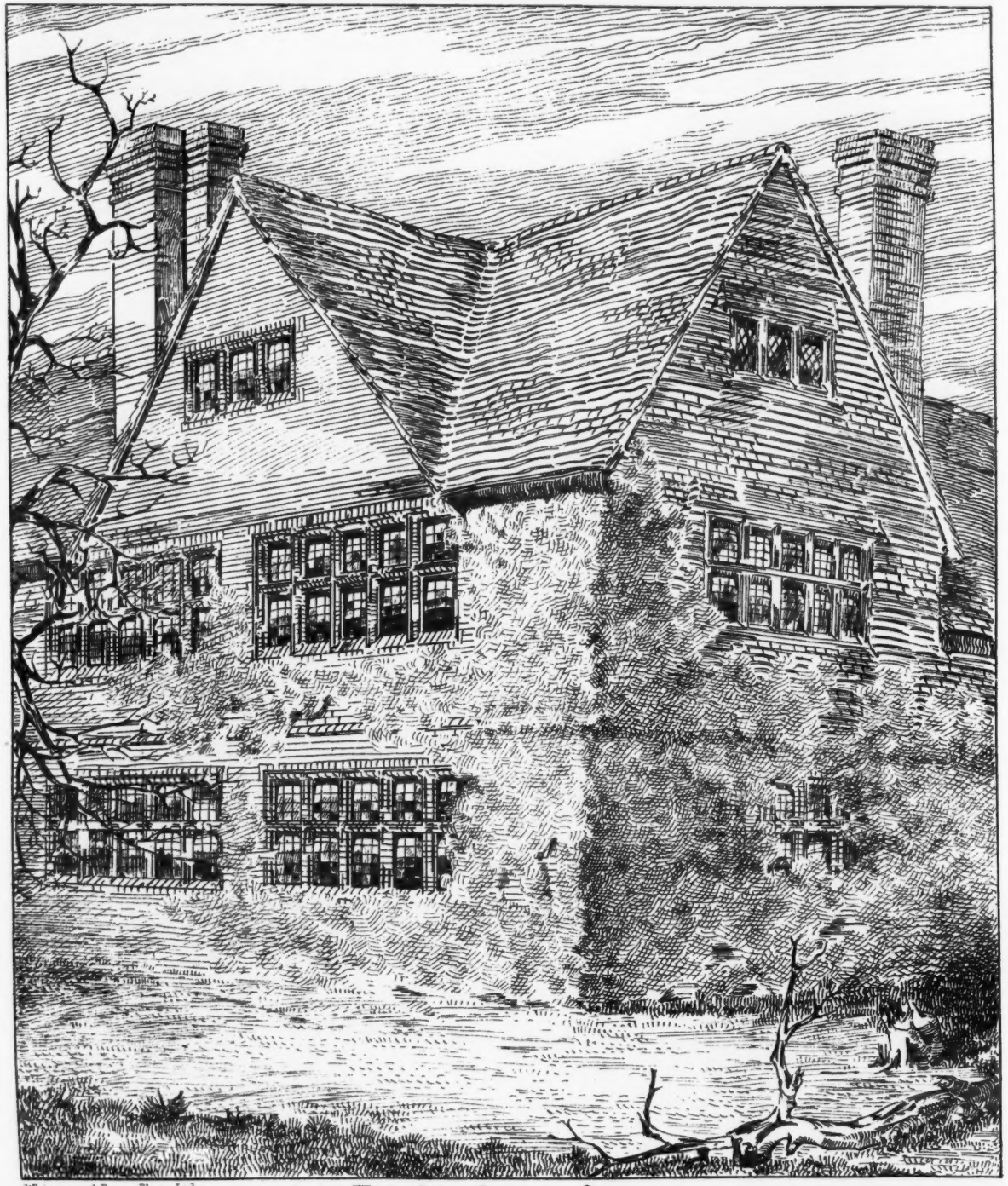
FRIEDRICHSTRASSE, BERLIN.—HERREN KAYSER AND VON GROSSHEIM, ARCHITECTS.



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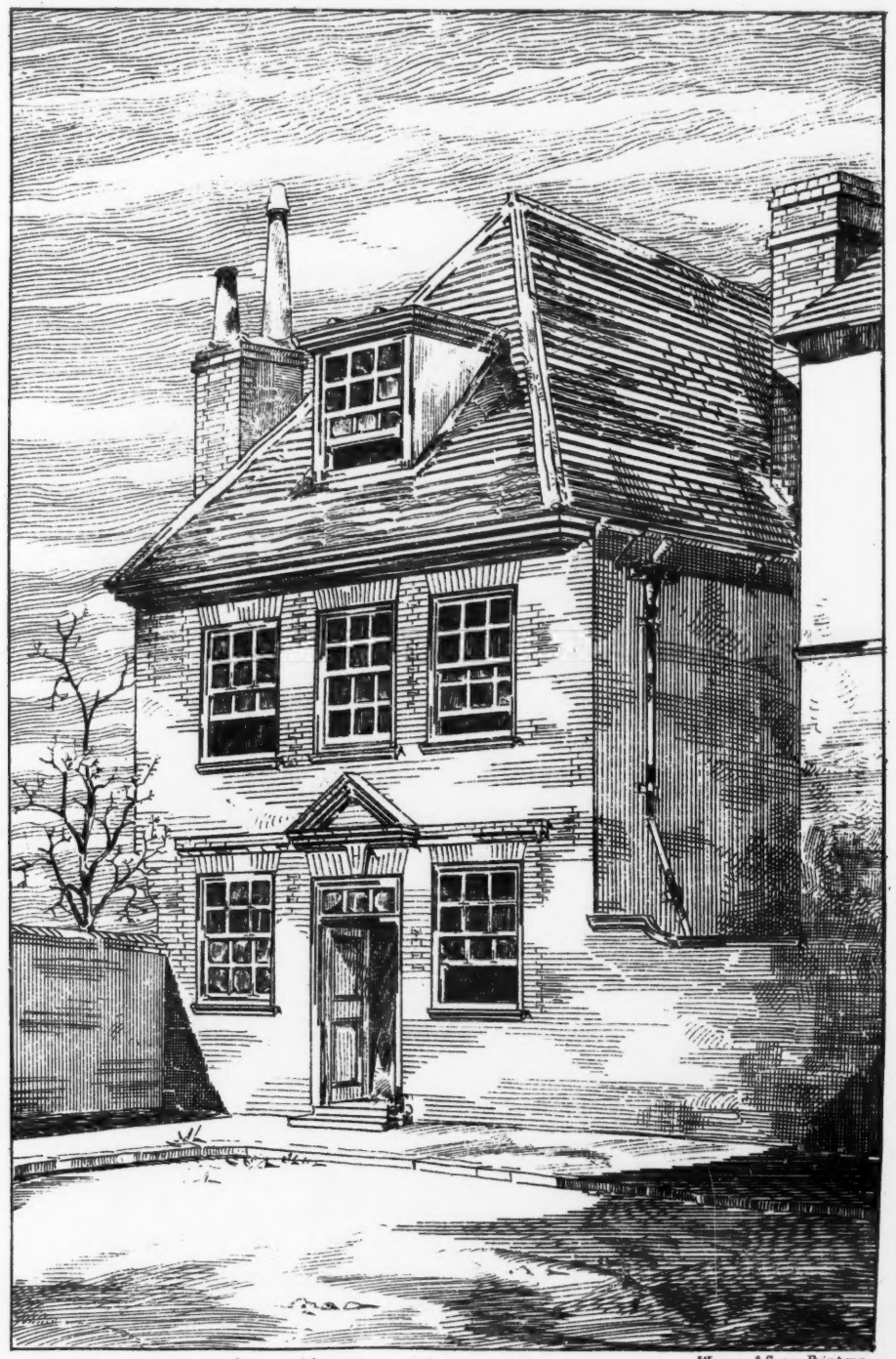
THE OLD GRAMMAR SCHOOL



SMALL HOUSE IN MARKET-SQUARE

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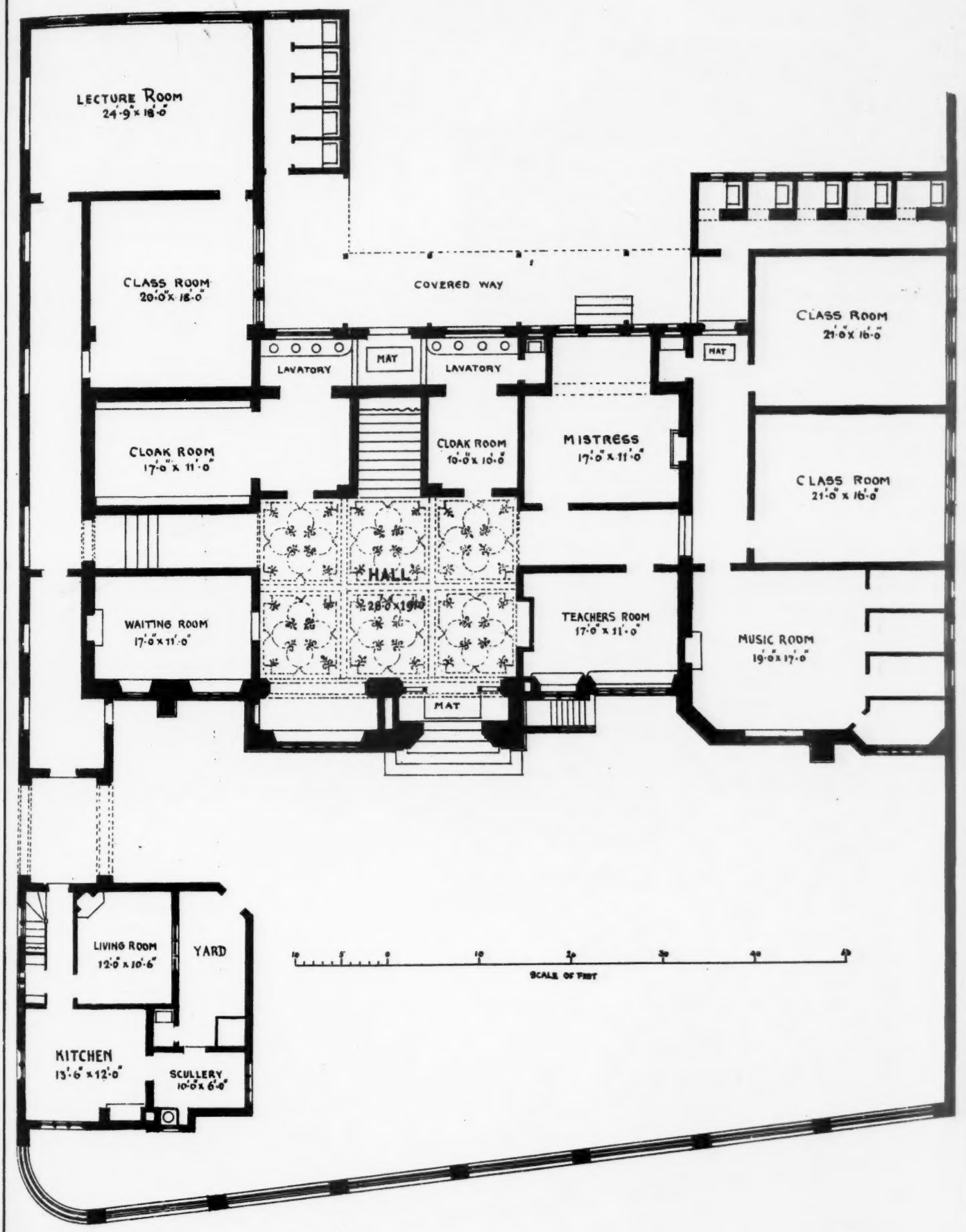

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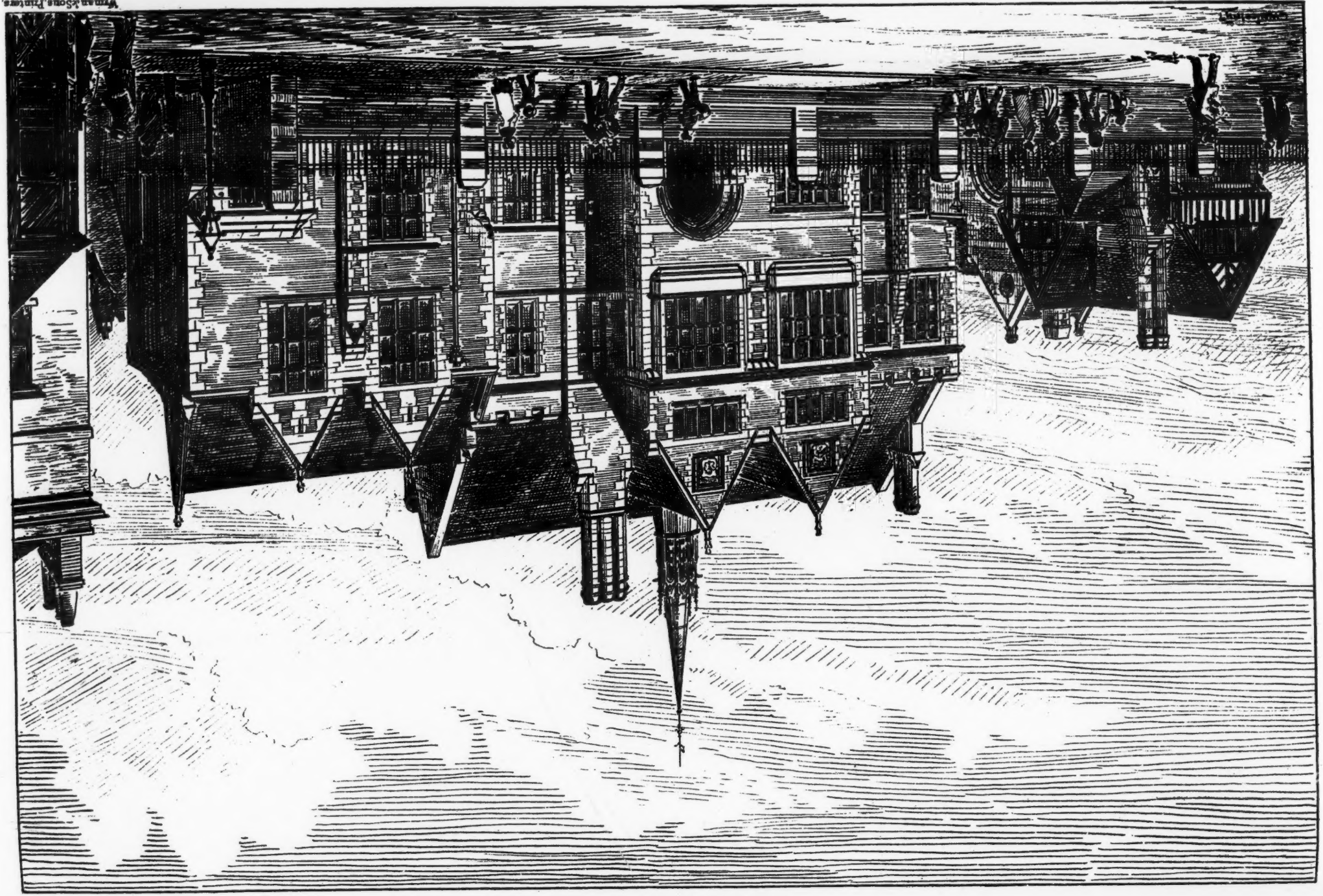
WYGGESTONE HOSPITAL, LEICESTER: NEW GIRLS' SCHOOL.— *Ground Floor Plan.*

WYGGESTONE HOSPITAL, LEICESTER: NEW GIRLS' SCHOOL.—Mr. Edward Burgess, Architect.



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THE ALEXANDRA THEATRE, PANTON-STREET, HAYMARKET.— Mr. Thomas Verity, Architect.

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THE ALEXANDRA THEATRE, PANTON-STREET, HAYMARKET.—MR. THOMAS VERITY, ARCHITECT.

which it has yet been put in England; for ceilings or walls decorated with arabesque or what not, and places where large pictures may not be required, it possesses to the full all the qualities most desirable for this as well as for large monumental works, and spirit fresco, so-called (the Gambier Parry process), comes very near it. For some reasons not hitherto satisfactorily explained, pure fresco does not seem to stand well in this country, I fancy very often because we do not sufficiently know how to use it.

Most of the painting which we find combined with stucco relief is in distemper and most beautifully executed; indeed, the tradition of this work has been handed down even to the present day, and I believe Italian workmen are to be found now who are no longer artists in the right sense, but whose technical skill enables them to execute ornamental work in distemper in a way that very few Englishmen could. It is, to a great extent, the same in Italy with all the arts. The workers in marble and the wood-carvers are to this day almost unequalled for a certain technical skill and power over their material. But I think that, even if the pictures are only to be small medallions surrounded by much ornament, as in the ceiling, before mentioned, in the third chapel in S. Maria del Popolo, fresco is a very good material, and one which might be used with better effect than any other. But, putting aside fresco, there are many other modes of painting walls.

Encaustic is a very fine medium, seldom or never used, I believe, in this country. We all know its wonderful powers of lasting and of withstanding damp. According to Müller, the wall paintings at Pompeii were not encaustic, but merely water-colours on smooth plaster, distemper, in fact, though the effect of some of them is certainly much like encaustic. At Herculaneum, which I have not visited, Müller says the ground is generally fresco and the rest *tempera*. A great deal of the Egyptian painting was very like encaustic; if not so in the true sense, the colours were mixed, in a great measure, with wax, and laid on the dry plaster. True fresco does not seem to have been known to them, at any rate it was not used by them. Wax might be made much more use of; it renders colours safe from damp and gives a good surface, besides being a very pleasant medium to work with.

OFFICES OF THE LIFE ASSURANCE SOCIETY, "GERMANIA," BERLIN.

GREAT as may have been the evils that followed in the wake of the reckless speculation engendered during the time known as the "Gründerperiode" in Germany, Berlin has every reason to look back with gratitude upon those stirring times. The permanent benefits conferred upon the city during that period of inflation are manifold. The unprecedented development of the speculative mania acted in a remarkable manner upon the progress of architecture. Up to that time Berlin architects had aimed principally at simplicity, solidity, and practical usefulness, and even the creative power of a Schinkel was scarcely allowed full sway; but during the speculative period a complete change was effected in this respect. The simple and sober Greekish style which Schinkel had founded was looked upon as too monotonous; during the time of Friedrich Wilhelm IV. already the types of the picturesque middle ages served as models, but it was not until the present reign that the Renaissance was finally established in Berlin. The great commercial progress of Berlin, which doubled the number of its inhabitants in fifteen years, and made the city on the Spree the financial centre of Germany, caused numerous institutions to take up their quarters there, and to erect palace-like offices. The small, one-storied buildings, with their plain façades of the time of Friedrich Wilhelm I., gradually disappeared, their sites being filled up by sumptuous buildings, in the erection of which sandstone, granite, and even marble were lavishly employed. The jejuneness and simplicity which were characteristic of the capital until 1860 gave place to a wealth of form and colour which had formerly been considered impossible, and had been condemned as *bizarre*.

This transformation was most quickly effected in the Dorotheenstrasse and Friedrichstrasse, that brilliant and largely-frequented quarter of the city which, as the promenade of the upper classes of society, exerts the greatest power of attraction upon the visitor, and is able to compete with Paris by the wealth of its shops and shows. There, in the principal artery of Berlin, the Grosse Friedrichstrasse, near Unter den Linden and the Gensdarmenmarkt, the "Germania" Life Assurance Society has had erected magnificent offices, which eclipse all other similar buildings there. We present our readers with a view of the structure.

Its architects, Herren Kayser and von Grossheim, had previously found scope for the exercise of their talents, but they had never before such an opportunity of following entirely their own inclinations as in the erection of the "Germania" offices. It is true the architects had to be guided in the utilisation of the space placed at their disposal by considerations of income, the two lower stories being intended for shops and offices, the three upper for private residences; but they were permitted to erect the façades in the richest monumental style, and to employ exclusively native material. The Northern brick was rigidly excluded, its place being taken by the Nesselberg sandstone, of an exceedingly fine grain and a delicate yellowish hue; the pillars and columns are of Swedish granite of grey colour with a light reddish hue, and the intervening spaces and niches of polished black marble. The capitals of the columns and the richly ornamented lamps are executed in bronze. The castles and palaces in the old imperial free cities of the flourishing period of the German Renaissance, and especially the well-known castle at Heidelberg, served as models for the edifice. At the same time, there is no trace of slavish imitation; the requirements of our time have been duly considered, and the teachings of a Schinkel and a Stüler have been taken note of. This shows itself especially in the harmonic formation of the façades, and in the careful execution of the details.

The base of the two façades, which, together, have a length of 295 ft., consists of polished grey granite, which, as well as that for all the parts of the building executed in this material, has been derived from the Swedish quarries of the eminent firm of Kessel & Röhl. Upon this base rise two stories, used solely for shops and offices, as already noticed, and provided with large plate-glass windows. In order to obviate the usual monotony, a suitable division of the façades has been adopted, which runs through all the stories. The corner projection is most pronounced; but, besides, two portions in each façade project. The quoins, as principal supports, are boldly rusticated, while the pillars of the façades are richly ornamented. The large windows are separated by handsome columns of polished granite, which in the ground story are of the Tuscan, in the first story of the Ionic, order. A bold entablature separates this portion of the façades from the second and third stories, which display larger surfaces of ashlar stonework, and the windows of which are framed by pilasters and surmounted by well-developed pediments. The fourth story is also divided from those below by a bold cornice. But the greatest care, in point of decoration, has been bestowed upon the two central portals and that of the corner. In each case two Doric columns support an entablature and pediment. Above them are projecting bays resting on large caryatides. Handsome dormers and statues present themselves above the oriels, and the architect and sculptor have co-operated to produce a handsome façade.

SKETCHES IN ALTON, HANTS.

THE accompanying drawings of two bits from Alton give a general idea of several residences of this picturesque town, more especially that of the little "Queen Anne" house, in which style there are many examples. The old Grammar School is situated a short distance out of the town, and is set back 30 ft. or so from the road. To the best of my belief, it has been a school since it was founded, amongst so many others in the kingdom during the sixteenth and seventeenth centuries. The mullions and transoms of this building are of moulded bricks, many examples of which are to be found in the neighbouring districts.

EDWIN G. HARDY.

Sydney Exhibition.—A first-class medal and diploma have been awarded for merit in architectural design to the late firm of Tarring & Wilkinson, which has recently dissolved, Mr. Tarring still carrying on business in Basinghall-street, and Mr. Wilkinson at Furnival's Inn.

THE ALEXANDRA THEATRE, LONDON.

THE new theatre, now being erected by Mr. J. H. Addison, in Panton-street, Haymarket, for Mr. Henderson, from the designs and under the superintendence of Mr. Thomas Verity, F.R.I.B.A., will be, in many respects, unique in its arrangements; more particularly, we may instance the entire absence of corridors, so that, in the event of panic or fire (which is just now engaging so much attention) the whole house can be quickly emptied, either directly into the street or into absolutely fireproof staircases. The theatre, being situated at the junction of two streets, will have the great advantage of numerous exits, every part of the house having two or more separate means of egress, and, in fact, every precaution which the architect could devise, or the Metropolitan Board of Works could suggest, has been adopted in order to render this theatre as perfect as possible for the safety and convenience of the public. The dress-circle will be entered directly from the street level through a spacious vestibule, having on the left hand a handsome saloon. The stalls will be approached by fireproof staircases on either side. The upper-boxes, pit, and gallery are to be equally well provided with staircases. It is intended to illuminate the entire auditory by the electric light, but to avoid the possibility of the theatre being plunged, by any accident to the machinery, into darkness, a certain number of gas-jets will be also provided. The house will accommodate 160 in the stalls, 130 in the dress-circle, 170 in the upper-boxes, 400 in the pit, and 270 in the gallery, besides having 14 private boxes. The theatre will be opened in the autumn for the performance of comic opera, and the opening piece will, we understand, be "Count Hoffman."

WYGGESTON HOSPITAL GIRLS' SCHOOL.

THIS girls' school has been lately built from the designs of Mr. Edward Burgess, of London, architect, to accommodate 250 children.

The materials used are red brick and Ancaster stone, with tiles on the roofs. The *flèche* is covered with lead, and some half-timber work is introduced in the lodge. The builders were Messrs. J. Hutchinson & Sons, of Leicester.

THE SCOTCH SYSTEM OF TAKING QUANTITIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.

MR. JOHN MCLACHLAN, as president of the Association, delivered a valedictory address at the closing meeting of the session. The treasurer's report showed the funds to be in a flourishing condition, and the lecture session just closed was spoken of as having been very successful.

In the course of his address, the President, describing the proceedings at the recent Conference of Architects in London, said with reference to the discussion on "Quantities,"—To those situated like ourselves, practising principally in one neighbourhood, it was amazing to find, as the discussion advanced, the different methods of procedure which prevailed in different parts of the country. In London, it seems, there is no regularly organised body of surveyors. Many, if not most, of the London architects measure their own plans. It is only those architects in the best practice who do not measure their own plans, or at least have the schedules prepared in their offices. When works are large, it is customary that *two* surveyors be employed, each working for himself. The one is appointed in the interest of the client, the other of the builder's. It is difficult to see any reason for two separate surveyors for a work, unless either, on the ground of incompetency or roguery. I regret to say that in the course of the discussion Professor Kerr spoke in anything but flattering terms of surveyors in London. He said that with some honourable exceptions they bore a very shady reputation. The provincial architects in England almost invariably measure their own plans. They do not generally hold themselves responsible for the correctness of the measurements, and yet they charge 2½ per cent. for preparing them, in addition to their 5 per cent. as architects. The principal reasons given by those architects present at the meeting for the course taken by them in preparing their own bills of quantities were that there were no surveyors in their neighbourhoods, and to send

their plans to London to be measured would be a costly and troublesome process. The second reason, and as I suspect the most potent one, is that taking out the quantities is the best paying part of their practice, and, therefore, they would be very unwilling to give it up. The third reason, which, indeed, was made the principal reason by many speakers, was that nobody could take out the quantities so well as the architect, because nobody knew so well about the plans. With our experience in Edinburgh of the correct and detailed schedules of our ordained surveyors, this reason will not weigh heavily. Our own Scotch method I need not describe at length. There is a slight difference between the Edinburgh and Glasgow methods, but it is only slight. Practically, the method of procedure is the same in the two cities. Architects do not measure their own plans. There is a separate class of men, surveyors,—men of high class,—whose generally irreproachable character is at stake in the correctness or otherwise of their schedules. The schedules are prepared at the commencement of the work, and the contract is founded upon them. Should there be any additions or deductions, these are regulated by the priced schedule, which is signed by the contractor as one of the conditions of the acceptance of his offer. The only difference, as far as I could understand, between the Glasgow system and the system prevailing here is that the first schedule on which the contract is founded is, in Glasgow, more a tentative document than it is with us. With us the first schedule is a very complete and exact document, and if no alterations were made in the building it would show exactly what would be the final cost of it. But, in Glasgow, the first schedule is not made so complete as with us, and the result is that the works are all measured up at completion, the first schedule being used more as a price-list from which the prices in the completed schedule are got. You will thus see that the difference between our usage and that of our brethren in the West is one more of detail than principle. We may, to all intents and purposes, therefore, talk of our Scotch system of contracting as one, and we have no reason whatever to be ashamed of it. It bears very favourable comparison with the systems pursued on on the other side of the Border, where there is no body of high-class professional surveyors with a recognised system of measurement as with us, but where architects measure their own plans, with all the loss of dignity and danger of squabbles which such a system involves,—where clients are punished to the tune of 2½ per cent., where all fair men will acknowledge that 1 or 1½ per cent. is ample remuneration. I say our Scotch system, with its fairness to all parties, clients, contractors, and architects alike, will bear very favourable comparison with the system pursued in England. We are credited among our brethren in the South with a fair amount of self-complacency. They aver of us that we are so charmed with our end of the island,—what Sydney Smith called our knuckle-end, with all its institutions and usages,—that unless a man can eat porridge, and drink whisky, and take kindly to kilts and bagpipes, he is nought; that, in short, all usages and customs here are perfect, and ought to be imitated by all the world. Our self-gratulation is, unfortunately, not likely to be lowered in connexion with the subject more immediately in hand. The Scotch system of contracting with schedules prepared by respectable surveyors with whom the architect has no monetary transactions whatever is rapidly growing in London, is now in use by all the best men, and I have little doubt that, in course of time, it will extend to all the larger towns of England where the population and business will justify the existence of a body of respectable surveyors.

An Adopted Suggestion.—The writer, in a former number of the *Builder*, of an article upon Canadian housebuilding, has received a letter from a friend in that country, containing the following:—"There is something I might mention to you which may be of advantage. In an article of yours in the *Builder* on housebuilding, lumbering, &c., in Canada, speaking of dust from sawmills, you thought it a pity that it should not be utilised. Some little time ago I saw in a paper that a mill had been started down on the Ottawa for the purpose of manufacturing the sawdust into pulp for various purposes."

ARCHITECTURAL ASSOCIATION.

THE last ordinary general meeting of this Association for Session 1880–81 was held on Friday, the 10th inst., Mr. Ernest C. Lee, President, in the chair.

The Obligatory Architectural Examination.

Mr. R. C. Page said that in the annual circular, which all the members of the Association had had, there was a reference to the formation of some classes which it was proposed to start with the view of assisting those members of the Association who wished to present themselves for examination as candidates for the Associateship of the Institute under the system of Obligatory Examination which will come into force next year. The committee had appointed a subcommittee to consider the matter, and that subcommittee had now reported to the committee of the Association in the following terms:—

GENTLEMEN,—In accordance with your instructions we have carefully considered how far the work of the Association can be brought to bear upon the studies of the members with special reference to the Examination of the Royal Institute of British Architects, and beg to report as follows:—

The necessity of a regular and systematic course of study to young men entering the profession is generally acknowledged, and now that the Examination of the Institute defines to some extent what that course of study should be, we consider that it would be of advantage to the members if the work of the Association could be arranged as a means to an end. To some extent the Association, by its classes, already does this; and, therefore, in considering the subject, we have been careful to avoid any interference with the present classes, endeavouring to utilise them as far as possible towards the working-out of a scheme, and supplementing them with other means, such as courses of lectures on the following subjects:—

(A.) History of Architecture.
(B.) The Nature and Properties of Building Materials, and their adaptation to Building Construction.
(C.) Professional Practice.
(D.) Class for Preparation and Criticism of Plans, Specifications, and Estimates, on the basis of the Class of Construction.

Each of the three courses of lectures to be delivered by some well-known member of the profession, who would doubtless be willing to undertake a course of twelve lectures, or two courses of six lectures each, for a fee of from ten to fifteen guineas. Such fees to be paid by the students in proportion to the number of members attending the respective series of lectures, and if the lectures were divided into two courses for each session, the proportionate amount for each member would be very small.

We would suggest that the existing classes should be utilised as far as possible (without interfering with their independence) for the purpose of enabling the students to turn to practical account the theoretical knowledge acquired from attending the lectures. As the Visitors to the Elementary Class of Design usually arrange their syllabus in historical order, there would seem to be but little difficulty in working their class in conjunction with the course of lectures A, on the History of Architecture, thus enabling the student to put to practical account the teaching of the lecturer.

In a similar manner the Class of Construction might very fitly work in conjunction with the series of lectures B, and the visits to buildings, workshops, and manufactories could be arranged in practical illustration of the subject; while the Advanced Class of Construction syllabus might be framed so as to aid the student in utilising the knowledge acquired from attending the series of lectures C.

If this scheme were tried we are quite convinced that the work of the classes would possess more real interest for the students, and the classes themselves would benefit thereby; but we think it should be quite understood that although the subjects for the classes might have reference to the Examination, they should be arranged in the same way as at present, and for the benefit of members in general, and not exclusively for those preparing for the Examination.

It is proposed that the lectures should be rather for the purpose of indicating a course of study than exhaustive discourses, and that each subject should be divided into two courses, Elementary and Advanced, in each session, but so arranged that one course should be attended one session, and the other the next; and if the lectures alternated, one being given each fortnight, it would allow one month between each lecture for preparation.

As an incentive to study, we would propose that prizes be offered by the Association of the value of five guineas, —three guineas for the first and two guineas for the second-best *resumé* of the series of lectures: such prizes to be awarded on the recommendation of the lecturer. We would further propose that at the end of each course an examination should be held by the lecturer in order to test the knowledge and diligence of the students.

We would suggest that the whole scheme be announced to the members through the medium of the "Brown Book," and that they be invited to co-operate with the Committee in an endeavour to enlarge the work of the Association, so as to be of especial benefit to intending candidates for the Institute Examination; and that the papers for the Examination of the Royal Institute of British Architects be printed in the "Brown Book."—We are, gentlemen, yours obediently,

J. DOUGLASS MATHEWS, T. ROGER SMITH,
E. B. I'ANSON, ALFRED CONDER,
S. FLINT CLARKSON, COLE A. ADAMS,
ERNEST C. LEE, RICHARD C. PAGE.

The President invited the co-operation of all the members of the Association in carrying out the recommendations contained in the report, and Mr. Page, in answer to a question, said that the names of the presidents of the classes and of the committees of Visitors to the classes would be invited to join the sub-committee.

The Association Travelling Studentship.

The Secretary next read the report of the judges in the first competition for the Architectural Association Travelling Studentship, which was as follows:—

We have carefully examined eight sets of drawings, submitted by the following gentlemen,—H. O. Cresswell, A. W. Cross, F. G. F. Hooper, G. H. Ince, H. H. Kemp, C. H. Marshall, W. A. Pite, and G. S. W. Tappen. We think we may fairly congratulate the Association upon the general excellence of the work, especially in view of the fact that but a short time has elapsed since the foundation of the studentship was announced. This is now the most important of the many prizes the Association has to offer to its members, and while we venture to think that the response the first invitation has called forth cannot fail to be gratifying to all the contributors to the fund, we trust that in future years a still higher standard of excellence may be attained, and also that the interest in the competiton may be still more widely diffused. Some of the competitors have failed to adhere in all particulars to the conditions; but, availing ourselves of the liberty given to the judges for this year by the notice appended to the sheet of instructions, we have not placed too strict an interpretation upon the rule regulating the number and description of the drawings to be submitted. It may be well, however, for us, in the interest of all who may be looking forward to future competitions, to call attention to the fact that hereafter *all* the conditions will be most strictly enforced.

We have unanimously awarded the Studentship for 1881, to be accompanied by the Bronze Medal of the Association, to Mr. Henry Hardie Kemp, and on the evidence of his drawings we fully believe he will make the best possible use of the opportunity for further study and progress.

We also recommend to the Committee that prizes be awarded to Mr. Francis G. F. Hooper and Mr. W. Alfred Pite, for the admirable series of drawings submitted by each of those gentlemen.

THOMAS HENRY WATSON,
GEO. VIALLS,
ERNEST C. LEE.

Mr. Kemp was introduced to the President and congratulated upon his success, as were Messrs. Hooper and Pite, the President announcing that the Bronze Medal of the Association and two guineas would be awarded to Mr. Hooper, and the Bronze Medal to Mr. Pite. Had the funds permitted, the awards to the second and third competitors would have been more substantial, and it was hoped that further subscription would enable the judges next year to increase the amounts.

Election of Officers for Session 1881–2.

Messrs. A. J. Gale and F. G. F. Hooper were appointed scrutineers of the balloting papers for the election of officers for next session. On their return to the room later in the evening they reported that the following gentlemen had been elected, viz.;—

President.—Mr. Aston Webb.
Vice-Presidents.—Messrs. G. R. Redgrave and L. C. Riddett.
Committee.—Messrs. C. A. Adams, E. C. Lee, C. Henman, R. E. Pownall, H. H. Stannus, E. B. I'Anson, E. G. Hayes, R. C. Page, C. R. Pink, and T. E. Collcutt.
Treasurer.—Mr. J. Douglass Mathews.
Assistant-Treasurer.—Mr. T. Williams.
Secretaries.—Messrs. F. E. Eales and W. H. A. Berry.
Librarian.—Mr. H. W. Pratt.
Assistant-Librarians.—Messrs. R. L. Cox and W. Burrell.
Solicitor.—Mr. Francis Truefitt.
Auditors.—Messrs. J. Smith and F. H. A. Hardcastle.
Registrar.—Mr. T. H. Watson.

Mr. J. Douglass Mathews, in proposing a vote of thanks to Mr. Lee for his services as President of the Association, and to Mr. R. C. Page, the retiring honorary secretary, congratulated the former gentleman upon the success of the movement initiated by him at the opening of the session for the establishment of a Travelling Studentship in connexion with the Association. The success of that movement spoke well not only for the enterprise and zeal of the retiring President, but for the liberality with which his appeal had been responded to by members of the Association, who had subscribed all the money amongst themselves. Mr. Page, the retiring honorary secretary, had been indefatigable in his labours, and was eminently worthy of the thanks of the members for his services.

Mr. Gotch humorously seconded the proposition, which was carried with much applause, and the President and Mr. Page briefly replied.

The President then read a paper by Mr. R. Corbett (who, being in Italy, was unable to be present) on "Colour Decoration as applied to Architecture, from a Painter's point of view." This we print on another page.

Mr. Stannus, in moving a vote of thanks to Mr. Corbett for the paper, supplemented and explained it by reference to a number of engravings and chromolithographs which he had brought and hung up in the room for the purpose. With regard to the Sistine Chapel a large engraving from Dolcibono was pointed to as showing the general arrangement of the whole ceiling and coves, some engravings by Giorgio Mantovano showing some of the large figures in greater detail. With regard to the ceiling of the Camera della Segnatura, in the

Vatican, the chromolithograph published by Grüner was exhibited as showing the setting-out and detail of the work. Mr. Stannus observed that Mr. Corbett had not alluded to the fact,—which should be more generally known,—that the design and beautiful arrangement of the ceiling were due to a Senese artist named Bazzi, and not to Raffaelle. It would be information to some of the members of the Association that a very beautiful copy of this ceiling, about two-thirds full-size, existed in England, at the back of the Italian Court at the Crystal Palace. Although blocked up by subsequent screens, &c., which scarcely allowed any light to get to it, it would well repay the trouble spent in visiting it, as it was executed by no less a man than the late Alfred Stevens, the author of the Wellington Monument in St. Paul's. With regard to Raffaelle's ceiling in the *Stanza* of Heliodorus in the Vatican, Mr. Corbett, although taking objection to some minor defects of the design, did not allude to its radical defect, *i.e*, the treating a groined roof as though it were a domical one. Now, there were four typical methods of roofing a square apartment, viz.,—(*a*) with flat ceiling, and no cove; (*b*) with flat ceiling and cove; (*c*) with dome; and (*d*) with groin; and each of these methods of roofing had its characteristic type of decorative treatment. In this *Stanza* of Heliodorus, the angle-ribs of the groin, resulting from the interpenetration of two semicircular barrel-vaults, left four trianguloid spaces to be dealt with, and all who knew the beautiful work at Assisi would remember how well Giotto had treated similar spaces there. In the Heliodorus ceiling the attempt to make a circle in plan had utterly failed; it resulted in a crippled effect which was very unsatisfactory, and only served to point a moral for those who were given to sneering at all Renaissance art. The photographs exhibited were from the gallery of the Farnese Palace decorated by Annibale Caracci, and they would be useful in showing the logical development, though not by any means the lowest step, of the system practised by Michelangelo. The engravings of ceilings from Versailles and the new Opera-house at Paris served to show how the modern French artists had thrived on their instruction. With regard to the Villa Madama, Mr. Stannus showed two engravings and an unfinished sketch giving the delicate details of this work; also an original design by Stevens showing the distribution mentioned by Mr. Corbett, and a photograph of a portion of ceiling in one of the rooms of the Cancellaria, exhibiting the elaborate plaster-work,—much of it done *in situ* by the operative. In a description of some plaster-work executed by Messrs. Jackson & Sons, of Rathbone-place, he (Mr. Stannus) had previously alluded to this practice of modelling the wet plaster *in situ*, the tradition of which had never died out in Italy. When in Venice lately he saw men doing this work in a way that would have put our own eightpence-an-hour plasterers to shame. With regard to the loggia of the Vatican, the coloured views and photographs shown gave a general idea of them, and the engravings by Camporesi and Volpato showed more in detail the flowing lines in the pilasters to which exception had been taken. The rubbing shown of some of the ornament on a tomb at Santa Maria del Popolo exhibited the perfect fitness of flowing lines to a horizontal surface. It was from a floor slab of a member of the Chigi family. Mr. Stannus also exhibited rubbings from floor-slabs in the Capella Emiliana and the Frari at Venezia, and in San Giovanno Evangelista at Brescia, exemplifying the good effect of flowing lines on horizontal surfaces. The photograph exhibited of a portion of the "Crucifixion," by Fra Angelico, at San Marco in Firenze, afforded an illustration of the difference of gauge in figures,—the figures in circles below being smaller than those in the main picture. The coloured engraving, by Grüner, from Santa Maria del Popolo illustrated the points mentioned in the paper. It might be said that, when kept without delusive realism in strong *chiaroscuro*, figures were not objectionable in similar positions; but the cast shadows tended to produce an uneasy effect on the beholder. Mr. Stannus also exhibited views in two of the rooms of the Farnesina. The entrance loggia was decorated by Raffaelle with episodes from the fable of Psyche; and the gallery towards the Tevere was decorated by Peruzzi, the architect of the building. These served as an instructive study of decoration as practised by painters and by architects. Mr. Corbett had not commented on the work in that building, nor had he touched upon one most important point in dealing with figure-design on curved surfaces when the figures were large in proportion to the radius of the curve. In the Albani ceiling in the Torlonia Palace, the smallness of flat surface and the largeness of cove were observable. Here there had been no attempt to diminish the pendentives at the top, and to increase the (apparent) size of flat; and the figures were too large, filling the whole curve, "oversailing," and appearing ready to fall out upon the spectator. A good rule, in such cases, would be that figures, if upright, should not be larger than the lower half of the quadrantal curve of cove or dome. The cupola in the Certosa of Pavia further exemplified this principle. Here the figures were sitting or kneeling, and were kept low, while the remainder of each division was filled by clouds, &c., with "a lamp of inspiration" hanging over the head of each. The dome of the Chigi Chapel in Santa Maria del Popolo showed Raffaelle's treatment, from which Mr. Edmund Oldfield, F.S.A., had observed that the inference might be drawn that Raffaelle "avoided introducing high, upright figures (which, from the sharpness of the curve, would be seen partly foreshortened, partly not, and therefore apparently in false drawing), but made the upright figures which personify the planets only half-length, and kept the full-length figures, which represent their attendants, in reclining or nearly horizontal positions, showing thereby a subtle observation of local requirements which is full of instruction." Mr. Stannus said he could not better conclude than by referring the members to the Introduction (especially Part IV., on Painting and Sculpture) to Mr. Fergusson's fine "History of Modern Architecture," for there would be found, in the space of eight pages, instruction of the greatest value on the subject.

Mr. G. R. Redgrave, in seconding the vote of thanks (in which he included the name of Mr. Stannus for the illustrated appendix which he had made to the paper), observed that it struck him that the paper might have usefully contained some further reference to the architectural treatment of the Pompeian paintings, which were really painted architecture, and, notwithstanding its difficulty, was admirable work. With regard to scale of figures, the Gothic sculptors, he thought, generally used scale in a very wise way, making the important figures in their composition to a large scale, and keeping their minor figures to a smaller scale. The same thing was to be observed in the mural paintings of the Mediæval period.

The resolution was carried, and so the proceedings of the session terminated.

SANITARY PLUMBING.

TRAPS AND TRAP VENTILATION.

MR. STEVENS HELLYER's third lecture* of the course of six lectures to working plumbers, under the auspices of the National Health Society, was delivered on Tuesday evening last. There was no diminution in the attendance. Professor Corfield was in the chair. The lecturer, in his introductory remarks, observed owners of mansions and parks were often more generous to their enemies than to their friends, for they warned poachers by writing up "Beware of man-traps!" although they never warned their guests by writing up "Beware of foul traps, which breathe out noxious gases!" There might be only a man-trap here and there where poachers might come, although there might be dozens of foul traps in and about the house where the guests were likely to be found daily. Moreover, man-traps did not kill: they only caught a would-be thief, and bruised his leg a little; but foul traps not only caught a friend,—at times they gave him illnesses, perhaps typhoid fever, and even death. It was, to the lecturer's mind, a most iniquitous thing that when soil-pipes, waste-pipes, and drains needed to be trapped off (as they always did), such filth-collecting boxes as D-traps, bell-traps, cesspool-traps, and manhole-chain-syphons, should be used. Malicious spirits were formerly supposed to,—among other ways of working mischief,—take the form of bad smells. One could well imagine their delight at finding such congenial lodgings to lurk in as were afforded by such appliances. Or did they have a hand in the mischief even earlier, by suggesting the forms of such traps to their devisers? Some people were now condemning the use of traps altogether. It was true that such anti-trap men were few and far between, but the fact that men were to be found preaching against the use of traps, and practising what they preached (for in their works they did not fix traps to sinks, lavatories, or water-closets), called for some notice. He was most strongly of opinion that the advocates of such open (untrapped) pipes were utterly wrong in their teachings. When waste-pipes were fixed without traps, what was to prevent them acting as ventilating-pipes to the house? especially when one end of the pipe was in a warmer and more rarefied air than the other, which would generally be the case,—one end being connected with the sink, lavatory, or water-closet *inside* the house, and the other end being open to the colder and heavier air outside. The fact was that directly such pipes completed their legitimate work,—that of conveying waste discharges,—they became ventilators, and helped to feed the fires and house with air of questionable freshness or purity. Of course if such waste-pipes could be kept perfectly sweet (a thing practically impossible), no danger could arise from such an arrangement, and it would save the trouble of opening the windows. A waste-pipe from a sink or lavatory, and still more from a urinal, could not help getting foul. Take the case of a scullery-sink,—the general sink in small and moderate-sized houses. The servant threw down into this sink a body of green-water hot from the saucepan, and, before the waste-pipe was dry, she turned a tub of hot greasy dish-water into the sink, with the washings-out of the dripping-pan. Then she washed her hands in a bowl, using plenty of soap, of necessity, to get her hands clean, and the bowl of soapy water was emptied into the waste-pipe, the suds adhering all the way down the pipe to the greasy matter already deposited upon it, and bubbling off in bad air to come back again into the house. Would any of the anti-trap men drink a glass of water after it had passed through such a waste-pipe? Assuredly not. Yet they did not mind the occupants of the scullery (or wherever such sinks were fixed) breathing the air which came through such filthy pipes. No lavatory or sink should be fixed (whether the waste-pipes from them were trapped or not) which would not allow a body of water to be sent through them to more than fill the bore of the waste-pipe, for all sorts of matter was at times emptied into such fittings, and unless good and efficient water flushes could be sent through them to cleanse it away, such matter adhered to the interior of the waste-piping and decomposed there. In a gentleman's house, only recently built, and with its sanitary arrangements carried out under the rules laid down by the Local Board of Health for the Croydon district, the lecturer said he had a test made to see the quantity of air which passed in an ordinary way through an untrapped waste-pipe. An anemometer was fixed on the grating over the top of a 2 in. untrapped waste-pipe of the scullery sink, and between the hours of nine p.m. and seven a.m. on the following morning (in the first week of the April of this year), the anemometer registered 8,205 lineal feet of air as having come into the scullery through the sink-waste, or an average of 820 ft. (lineal) per hour. Of course, the air which passed in through the waste-pipe did not remain in the scullery, but passed to other parts of the house, to be breathed by its occupants. Passing on to speak of water-closets without traps, the lecturer said nobody attempted to fix a water-closet without having some sort of seal between it and the soil-pipe; and though anti-trap men dispensed with the water-seal (or trap), they did not fix water-closets without some mechanical means of shutting off the soil-pipe from the closet,—*i.e.*, somewhere in the closet, or on the basin-outlet, they contrived to fix an indiarubber or metal valve, plug, or stopper, to prevent soil-pipe air coming into the house through the closet. There were now several methods of fixing such untrapped water-closets and soil-pipes, and if he were asked to say which of those methods he considered the most sanitary, he should say that known as Mr. Norman Shaw's. In a letter that he (the lecturer) sent to the *Builder* in March, 1878,* he condemned that method, and gave his reasons pretty fully. Mr. Norman Shaw made his soil-pipe only 3 in. in diameter, and therein he was quite right, as a 3-in. pipe could be kept more

* For reports of previous lectures see pp. 651, 711, *ante*.

* See *Builder*, vol. xxxvi., p. 225.

wholesome than one of a larger size. But, if filth could and did accumulate upon the interior of sink and lavatory wastes, if wastes used for the conveyance of mere dirty water got foul, how much more foul must pipes which took away excremental discharges get? He was willing to admit that if large and efficient water flushes were sent through the soil-pipes after each usage of the closet, such an arrangement as that of Mr. Norman Shaw might be kept tolerably wholesome; but if the closet were used with inefficient water flushes,—as would often be the case,—the soil-piping must in time become very offensive. The handle of a water-closet apparatus was often pulled only just sufficiently to discharge the contents of the basin into the soil-pipe, leaving the deposit which escaped out of the closet-basin, with whatever water there was in it, to stain its way down the interior of the soil-pipe to the drain; and then, as the basin-valve would be closed, there would be no flush of water to follow it to cleanse the filth away, but the excrement would be left to corrode upon the pipe. Again, however learned a person might be in the art of pulling-up a closet handle so as to give a free passage to the out-going matter and to well open the flushing valve, there would at times be no water in the supply-pipe to come into the closet to cleanse it. The water supply sometimes failed (1) because some leaky valve had leaked all the water out of the store cistern; (2) because repairs were being made to the company's main, and the water did not come in; (3) because the supply-valve or water-waste preventer was out of repair; or (4) because the water in the pipe was frozen. If the latter was the cause of there being no water, the fault was peculiarly that of the plumber, who ought not to have fixed his service-pipe where it could freeze. Another source of fouling a soil-pipe was that of using a water-closet as a urinal, in which case the standing water, largely impregnated with urine, overflowed down the overflow-pipe into the soil-pipe, and corroded upon it, for it was only rarely, in such cases, that the handle of the closet was pulled. He had known many soil-pipes to ladies' water-closets,—*e.g.*, at railway stations,—to get so furred that the bore had been reduced to one-half its original size after a few years' usage. Whatever mechanical means were used in untrapped water-closets for excluding soil-pipe air from the house, they were sure, at times, to fail. In the case of water-closets with metal seatings, indiarubber valves, or plugs, there were several ways whereby a failure might arise. For instance, the mechanism itself might fail, or a piece of paper or other matter might get between the valve and its seating, causing the water to escape out of the closet basin, and so leave an easy passage for the admission of soil-pipe air to the house. There were other evils attending such a system as that of Mr. Norman Shaw, such as (1), the danger of frost at exposed points; (2), the difficulty of limiting the length of the soil-pipe, for circumstances would require it to be of various lengths, and careless people would put no limit to it. Architects did not gain their reputations by designing the elevations of their buildings to suit water-closets. In some buildings the last thing to be considered was the water-closet, and so it got stuck anywhere where there was room for it, without reference to the drainage from it. The vitiated air in a long length of soil-pipe arm necessary to avoid a porch, oriel window, or other projection, would often escape into the house through an open basin-valve or imperfect seating. Having condemned what was, in his judgment, the more sanitary method of the two or more systems of fixing untrapped closets, the lecturer called attention to what he regarded as a more dangerous method still. It was within his knowledge that the plumbing and so-called sanitary arrangements of a nobleman's mansion had been carried out on principles which he was about to explain, and that, too, within the last twelve months. He did not know who was responsible for introducing stacks of soil-pipes with trapless water-closets upon them, but he believed it was the outcome of two or three would-be sanitarians. A tier of trapless water-closets was fixed on one stack of soil-pipe, and that stack of pipe, having one, two, three, or four water-closets upon it, might, or might not, be trapped at the bottom. By some men it was trapped and ventilated at top and bottom, but by others it was not trapped at all. In the nobleman's house referred to, the soil-pipes were not trapped off or disconnected from the drain, though the drain was open to the atmosphere somewhere in the grounds. By that system a drain was brought into the house, and branches from it were carried up under the floors to receive the various stacks of soil and rain-water pipe. The drain was carried some distance away from the house before it was exposed to the atmosphere, and the several stacks of soil-pipe were continued up through the roof full-size for ventilation, with cowls upon them. With such an arrangement there would often be no ventilation at all in one or more of the stacks of soil-pipe. It would, therefore, be quite possible for one or more stacks of soil-pipe to become filled with bad air, and in case of a defective basin-valve or an absence of water supply, a stack of such soil-pipe, with a tier of trapless water-closets upon it, might ventilate itself, and the drain too, into the house. Having shown the necessity of trapping, the lecturer proceeded to discuss the best means of doing it. He observed that all that was wanted in ventilated waste-pipes and drains was a water-lock. No sanitary fitting, waste-pipe, soil-pipe, or drain should be trapped in a way that would not admit of the whole of the water in such traps being entirely changed every time a flush of water was sent into them. Traps should only be required to act as air-barriers, to ward off the air travelling through the pipes, and to prevent it from entering the house. But traps used for that purpose were often so badly constructed, and the principles on which they were made were so radically wrong, that they both collected and held their filth, and became little cesspools. Such a trap was the D-trap. It was only fair, however, that he should say that one reason why some plumbers preferred the D-trap to the syphon was, that it was not easily syphoned out like the latter. About the first form of trap used, the lecturer believed, for fixing under water-closets, was the syphon or round-pipe trap,—*i.e.*, a pipe bent and re-curved in the shape of the letter S; but as that trap in usage was easily syphoned, and plumbers had not learned the way of preventing such syphonage by ventilating it, the D-trap was invented. He was able to say that the lead syphon trap was used under a water-closet as far back as 1775,—more than a century ago; but, as far as he could make out, the D-trap was not in use until 1790. Having shown specimens of foul D-traps, and illustrated, by experiment, the difficulty, if not impossibility, of properly flushing-out such traps, the lecturer went on to speak of the bell-trap, which, he said, could vie with the D-trap in the amount of evil it had achieved. Indeed, it would perhaps be impossible, in connexion with drainage matters, to find two more fruitful sources of evil than the bell-trap and the D-trap. The bell-trap was a non-cleansing trap, and was very inefficient on account of the movable top (which when removed left no trap at all), and of the slightness of the dip or seal. Of other non-cleansing traps, as well as of those which were self-cleansing, he would speak in his next lecture.

A gentleman in the meeting, who described himself as having been a plumber for very many years, asked whether discussion was allowed. On receiving a reply from the chairman in the negative, he said he thought it was very unfair that all that Mr. Hellyer said should go forth to the world as "gospel." He differed very materially from a great deal that had been said by Mr. Hellyer. The prohibition of discussion was not giving the trade a fair chance.

The Chairman observed that possibly the National Health Society would afford opportunity to the gentleman to give a lecture or lectures in reply to Mr. Hellyer's lectures. At any rate, objectors to Mr. Hellyer's views might urge their objections through the medium of the press. He (the Chairman), for his own part, agreed with almost every word Mr. Hellyer had said, particularly as to the necessity of having traps, although not such badly-constructed ones as D-traps and bell-traps, which could not be too strongly condemned.

The lecture was repeated on Wednesday evening.

Cork.—At the last weekly meeting of the Cork Board of Guardians, five candidates were proposed for the vacant office of architect, &c., to the Board. Mr. D. J. Coakley, A.R.I.B.A., of Grand-parade, Cork, was elected by a majority of eight votes over the combined votes for the other four candidates.

FROM ABROAD.

AN exhibition of building appliances and materials is announced to take place at Brunswick. It commences on the 1st of July, and closes on the 1st of October. It is intended to represent objects connected with building in their different forms of application, and machinery in motion will be a distinctive feature of the exhibition. For the purpose of facilitating the comparison of the progress made in different branches of the trade, it is intended to borrow specimens of articles connected with building science both from private and public collections. Arrangements are being made with the Government authorities for the purpose of giving prizes to exhibitors of objects showing inventive talent.

The recently-published will of the late Carl Scheibler of Lodcz contains the following bequests:—

1. The sum of 60,000 roubles for the building of a gymnasium or public school, provided that the Government sanctions its establishment, and that the city gives a site. The amount to be paid according to the progress of the building.

2 The sum of 10,000 roubles to found five scholarships of the annual value of 100 roubles each, intended for students of the working class attending the gymnasium. The choice of these students is left to the director.

3. The sum of 8,000 roubles for the poor-house.

4. The sum of 25,000 roubles for the Catholic Church.

5. The sum of 50,000 roubles towards the erection of the new Evangelical Church.

6. The sum of 10,000 roubles for the Orthodox Greek Church.

7. The sum of 15,000 roubles for the erection of a synagogue in the city.

Numerous other bequests follow of a charitable nature. The above extract will show that the great industrial proprietor we have named was impartial in his religious views, and his distribution of this portion of his worldly goods has no doubt met with the special approbation of those interested in building matters in his city.

FOREIGN AND AMERICAN SERIALS.

THE *Wiener Zeitung* (Vienna, May 29) states that in the coming winter session special courses of lessons will be given at the Technical Trade Museum in Vienna, on the following subjects:—Builders' wood-working and joinery, basket-making and withy-culture. A course of advanced instruction for cabinet-makers commences on October 1st, in connexion with the workshops for practical training.

In the issue of June 1 is given an abstract of the annual report of the Company for the Construction of Cheap Dwellings. A small profit was shown, but not sufficient to justify the payment of a dividend. The Vienna Building Company, on the other hand, showed a very large loss on the year's working.

The *Zeitschrift des Vereines Deutsches Ingenieure* (Berlin) for May gives an illustration and description of the Kraft cement-testing machine. The briquette is placed in two jaws, the strain being applied by a screw. The principle is that of the dynamometer, the breaking-strain being registered on a dial. The price of the machine is 14*l*.

La Revue Scientifique (Paris, May 28) contains the first of an interesting series of papers by M. E. Maindron, on the history of the French Academy of Science, which is continued in the issue of June 4, commencing from 1666, when reports of the meetings of and business transacted by the society were first regularly taken. M. Maindron gives a sketch of the work done by the Academy, a list of some of the leading scientific men who have been leaders of it, with the charters granting various privileges. Altogether, the two papers form an interesting and valuable record of the Academy.

According to *Science* (New York, May 21), a new department has been added to the American Museum of Natural History, which will contain specimens illustrating the economic botany of all the woods of the country used for architectural or building purposes, or in the manufactures.

The *Boston Journal of Commerce* (May 21) contains an article on the art of brick-making, in which it is pointed out that there are few articles of manufacture which receive so little attention, and yet that few are of more import-

ance. It expresses the opinion that the quality of bricks does not depend upon the manner in which they are made, or burnt (as is generally supposed), but on the material of which they are made. As a proof of this, it instances the "Old-Roman brick," which is considered to be perfectly fire-proof and imperishable. It is proof against frost, salt, or sea-water, and can be made almost as cheaply as the ordinary building-bricks.

PLYMOUTH ART-EXHIBITION.

THIS exhibition, a correspondent writes, has proved quite a success. Art is well represented, and there are many good examples of painting on china and terra-cotta by ladies and professional artists. Among the water-colour drawings the following are exhibited:—T. Cox, London, design for stained-glass window; W. Tipping, design for art-tiles and stained-glass window; J. C. Tully, design for oak cabinet; J. R. Suffling, design for stained-glass window. Good specimens of carving are exhibited: five art-carved panels in walnut, early in style, by J. Lemon, Exeter; carved panel and carved frame, "Christ at the Well," and the "Woman of Samaria," by J. Bickley; carved Glastonbury chair, by Miss Ellis; carved table, by Mrs. Kirwin. Many good examples of fret-work are exhibited: "The Seven Ages of Man" and "The Start and the Return," by J. Sparrow. Amongst the various articles of fret-work are, a model of a state chariot, various baskets, brackets, bird-cage, and what-not, in various designs. In furniture, D. Kingdom, Plymouth, exhibits a bedroom suite, in Pensacola pitch-pine, in the Mediæval style. There are also many good examples of oil and water-colour paintings exhibited.

The exhibition closes on the 20th of June.

VOTES FOR PUBLIC WORKS.

BUILDINGS FOR THE CIVIL SERVICE.

THE House of Commons, in Committee of Supply on the 9th inst., agreed to the following votes for buildings connected with the Civil Service and Revenue Departments, viz.:—Sum to complete the vote of 15,980*l.* for furniture of public offices; sum to complete the vote of 228,515*l.* for Revenue Department buildings; sum to complete the vote of 55,496*l.* for County Court buildings.

On the vote to complete the sum of 10,013*l.* for the Metropolitan Police Courts, Mr. Rylands moved to reduce the vote by 2,200*l.*, the cost of alterations and additions to the Hammersmith Police Court. He contended that the sum he had named ought to be provided out of local rates. After a discussion the amendment was withdrawn, and the vote was agreed to.

A vote to complete the sum of 7,195*l.* for Sheriff Court-houses, Scotland, was agreed to.

On the vote to complete the sum of 120,200*l.* for the New Courts of Justice, &c., Sir A. Lusk asked when there was any prospect of the Courts being finished, and what their cost would be. Mr. Shaw-Lefevre said he had every reason to hope that the Courts would be completed by Easter next year. He believed next year's vote would not exceed that of the present year. The vote was then agreed to.

On the vote to complete the sum of 125,000*l.* for the survey of the United Kingdom, Mr. Rylands commented on the very large increase of the vote that had been made in consequence of the desire of the House to accelerate the survey. Mr. Shaw-Lefevre explained that while the votes had been increased only 25 per cent., the work done during the past year exceeded that of the preceding year by as much as 80 per cent. He hoped that the entire survey would be finished by the end of the year 1890. Sir. A. Lusk remarked that the face of the country changed so rapidly that it was necessary to publish each completed portion of the survey as rapidly as possible. The vote was agreed to.

On the vote to complete the sum of 22,141*l.* required for the buildings of the Science and Art Department, Mr. Dillwyn characterised the establishment at South Kensington as overgrown, and to a great extent useless, and complained that the sum asked for increased every year. He hoped that the Government would give an assurance that after the present year the expense under the head of "building" would be discontinued. Sir Henry Holland hoped the Government would not be influenced by the statements of the hon. member, who had probably not been to South Kensington lately. If he had, he would have found it filled with people who took the greatest interest in the works of art exhibited there. He did not think it an overgrown institution, and the money expended on it was well laid out. Mr. Shaw-Lefevre said that all the assurance he could give the hon. member for Swansea was that there was not any present intention of asking for a larger sum. The South Kensington Museum was extremely popular; if they were to judge by the numbers who visited it, there was no institution in the metropolis more appreciated. As to the 1,000*l.* a year for rent, the gallery belonged to the trustees of the Exhibition of 1851, and the Government thought 1,000*l.* a year very much less than the value. Mr. Rylands said that the item of 1,820*l.* for salaries of architects and assistants ought to come under the sub-head of salaries rather than of new buildings. He wanted to know whether there was anything in the duties of the director of new buildings at South Kensington which could not be fulfilled by the Board of Works. Lord F. Cavendish said that the architect at South Kensington had been retained to complete certain works in hand. Mr. A. O'Connor complained that the architect of works at South Kensington appeared to be paid in proportion to the length of time which the work occupied, and asked whether some arrangement could not be made by which that officer should be paid by the job. Lord F. Cavendish explained that the reason why the new buildings at South Kensington had not been executed more rapidly was not any want of zeal on the part of the architect, but because the Treasury had endeavoured to cut down the expenditure on them as much as possible. After some further conversation, the vote was agreed to; as was also a sum to complete the vote of 6,523*l.* for the British Museum Buildings.

On a sum to complete the vote of 45,858*l.* for the Natural History Museum, Mr. Dillwyn complained that although the original estimate for that museum was 350,000*l.*, and the revised estimate was 409,000*l.*, a further demand was now made on the public to provide for a collection of objects to be preserved in spirits, and for certain other additional works. He thought they ought to look with some jealousy on further schemes for the extension of the establishment at South Kensington; and as they were not properly informed of what the increased outlay in the present case was required for, he moved that the vote be reduced by the sum of 17,043*l.* Mr. Shaw-Lefevre said the new building was an essential part of the Museum. Mr. Dillwyn's amendment was rejected by 66 to 17, and the vote was agreed to.

The vote to complete the sum of 20,000*l.* for Edinburgh University buildings was agreed to.

On the vote of 10,609*l.* for harbours and other matters under the Board of Trade, Sir G. Balfour reminded the committee that a sum of no less than 800,000*l.* had been expended in constructing a pier at Dover, and yet so unsatisfactory had the work proved to be, owing to a defective mode of construction, that a considerable expenditure had to be incurred to repair damage that ought not to have occurred. The vote was agreed to.

The vote to complete the sum of 193,926*l.* for public buildings in Ireland was agreed to.

The next vote was to complete the sum of 10,000*l.* for science and art buildings, Dublin. Mr. Gorst protested against the practice of spending money on new buildings for the total cost of which no estimate had been presented. Sir R. Cross thought it had been long ago settled in principle that no new buildings should be begun without an estimate for the whole cost. The vote ought be withdrawn, unless the noble lord was prepared to say what sum of money was to be spent from first to last. Lord F. Cavendish quite agreed with the doctrine that had been laid down by the right hon. gentleman, but the circumstances of the vote were peculiar. It had been understood for some time past that the buildings in question were to be erected, but their site had not been fixed upon until after a long controversy. The vote was now necessary, but he hoped to present the complete estimate before the end of the session. Mr. Gorst moved the reduction of the vote by the sum of 3,500*l.*, the amount of an item for commencing the erection of a museum of science and art in Dublin. Major Nolan complained of the opposition offered to the vote for science and art in Dublin, while such very large sums for similar purposes in England were granted. Mr. Mundella explained that when the present Government came into office one of the first things that was pressed upon them was the carrying out of a pledge given by their predecessors that a science and art museum should be erected in Dublin. The whole question was where the site of the building should be, and it was only within the last week that the Government were in a position to say that Kildare-street should be the site fixed upon. Not a day would be lost by the Department in pushing forward the work. Mr. Gorst suggested that progress should be reported, in order that the Government might have an opportunity of consulting an architect upon the question of the cost of the buildings. Mr. Magniac hoped the Government would not consent to report progress. The sum necessary for the foundations of the buildings might well be granted by the Committee without any infringement of the rule of economy. Mr. Peddie thought an estimate of the cost of the buildings might easily be obtained from the surveyor in the employ of the Board of Works. The vote was agreed to by 97 to 30.

OBITUARY.

Mr. S. A. Hart, R.A.—Mr. Solomon Alexander Hart, R.A., librarian of the Royal Academy, died on Saturday last, the 11th inst., aged seventy-five. Born at Plymouth in 1806, he was the son of Mr. Samuel Hart, who, while apprenticed to a goldsmith, studied art, and afterwards painted under Northcote in 1785. His father having removed to London, Solomon Hart entered the Royal Academy as a student in 1823, and exhibited his first work, a miniature of his father, in 1826. He continued for a time to paint miniatures for a livelihood, but showed his first exhibition oil picture, "Instructions," at the British Institution, in 1828, and the "Elevation of the Law," which was purchased by Mr. Vernon, at the Suffolk-street Gallery, in 1830. Among succeeding pictures were "Wolsey and Buckingham," 1834; and "Cœur de Lion and the Soldan Saladin," 1835, which led to his election as an Associate of the Royal Academy. In 1840 he was elected a Royal Academician. During a visit to Italy, in 1841-2, he made an elaborate series of drawings, originally intended for publication, of architectural interiors and sites famous in history. Mr. Hart employed the materials then collected in several pictures, among which were "Dinner-time in the Refectory of the Convent of the Ognessanti, Florence," "Interior of the Cathedral at Modena," and "Interior of the Cathedral at Pisa," and "An Offering to the Virgin." In 1857 he succeeded Mr. Leslie as professor of painting in the Royal Academy, and in 1865 was appointed by the Queen librarian of that body. In the present exhibition of the Royal Academy he has a picture of "A Hoarder." Mr. Hart was buried on Tuesday last, at the Brompton Jewish cemetery.

Mr. John Collier.—We regret to announce the death of Mr. John Collier, of Salters' Hall, St. Swithin's-lane, which took place on the 3rd inst., at his residence, Wychwood, Putney. He held the appointment of surveyor to the Worshipful Company of Salters for eighteen years, and many buildings were erected for them from his designs. He was also an Associate of the Institution of Civil Engineers, and a Member of the Institution of Surveyors, besides holding several public appointments in the City. The following are some of the buildings designed and carried out by Mr. Collier:—Railway Works, Goswell-street; Offices in Coleman-street, for Mr. Charles Morrison; Salters' Almshouses, at Watford; Witney Corn Exchange; Asthall Vicarage and Schools; and the new *City Press* Offices.

Mr. William Paterson, C.E.—Mr. William Paterson, C.E., whose name for many years has been identified with some of the leading engineering undertakings in the North of Scotland, died at his residence at Larkfield, Inverness, on the 29th ult.

Alderman Sir W. A. Ross died suddenly on the 9th inst., while in his carriage on the way to the City. He seems to have been the architect of his own fortunes. Having been educated at St. Olave's Grammar School and at the London University, he started in business for himself as an oil-refiner, taking the ground-floor of one of the houses occupied by him in Queenhithe. As the business extended, and he obtained the royalty of some important patents,—especially the anti-friction grease used for railway-carriages,—the whole house was

secured, and, in course of time, the adjoining house as well. He was Lord Mayor of London in 1862, and had the honour of receiving the Princess Alexandra into the City on her arrival in this country to become the wife of the Prince of Wales. He was in his 61st year.

MONUMENTAL.

A MEMORIAL to those officers and men of the 13th (Somersetshire) Regiment, who were lost in the South African war, and also as a record of the regiment, has just been erected in the north transept of Wells Cathedral, by General Lord Mark Kerr, G.C.B., the colonel, and other officers. The composition is in five panels, the central one higher and wider than the rest, having a slightly-projecting canopy carried on carved corbels. This contains a representation in terra cotta of David after he has slain Goliath, a a subject peculiarly appropriate to the history of the 13th Regiment, which so frequently has been victorious in spite of superior numbers of the enemy. This is the work of Mr. Tinworth, of Doulton & Co.'s. The architectural portion of the monument has been designed by Mr. Edmund B. Ferrey. Each panel is arched and trefoil-cusped, and is pedimented with a carved fleuron. There are blue lias shafts with moulded capitals. Between the window-cill of the north transept and the before-mentioned canopies is a rich sculptured frieze of foliage and simple diapering. The material is Doulting stone (which is employed throughout the cathedral, including the screens and monuments), except the panels containing the inscriptions, which are of yellow Mansfield stone. In the tympana of the arches are shields containing various emblems.

LIVERPOOL.

The Walker Art Gallery.—At a meeting of the Library, Museum, and Arts Committee of the Liverpool Corporation, on the 9th inst., the City Surveyor, Mr. Shelmerdine, submitted plans for the enlargement of the Walker Art Gallery, at a cost of from 10,500*l.* to 11,000*l.* A resolution was adopted to the effect that it be recommended to the City Council that the plans be adopted. The intention is to provide commodious exhibition-rooms, without interfering with the arrangement of the permanent art collection. It may be added that an exhibition of the original drawings and engravings by Messrs. Charles Green and W. D. Barker, at the Walker Art Gallery, was opened to the public on Saturday last. There are in all about 250 works. The exhibition will remain open a fortnight longer.

The Mersey Tunnel.—There appears to be every prospect (according to the *Daily Post*) that the proposed railway tunnel between Liverpool and Birkenhead will before long be brought to a successful termination. No greater obstacles than were anticipated and provided for by the promoters and engineers of the company engaged in the undertaking have been met with, either in the sinking of the shafts at the Liverpool and Birkenhead ends, or in the process of cutting the trial borings. At the Birkenhead shaft a powerful engine and pumps have been erected; and a shaft is sunk 17 ft. 6 in. in diameter, 170 ft. deep, and which is about 138 ft. below the old dock sill. From the shaft heading, which is 8 ft wide and 7 ft. high, a boring has been carried for about 170 yards to within 100 yards of the river wall. A pair of 30-in. lifts have recently been put down. They have an 8-ft. stroke, and are capable of raising 6,000,000 gallons of water per day. The engine was made by the firm of Hathorn, Davey, & Co., of Leeds. The water at present entering the shaft is about 1,600,000 gallons per twenty-four hours. The rock cut through for the shaft and boring is exceedingly solid and compact. There is scarcely any fissure, and for some yards in many places it is almost dry. Judging from the rock already cut through, there are no difficulties in the way of the further progress of the work than those of ordinary rock excavation and pumping, for which ample provision has been made. The present boring is driven at the rising gradient from the shafts of 1 in 500, so that the water permeating through the rock gravitates to the shafts, where it can be easily pumped up by the powerful engines at each end. It is expected by Mr. Irvine, the resident engineer, that progress will be made from each shaft at the rate of twelve yards per week, and, allowing for all necessary stoppages, it is estimated that the trial heading will be completed in about a year. The tunnel, which it is proposed to construct simultaneously with the trial boring, will be wide enough for a double line, and will, it is hoped, be completed in about three years from its commencement. On the Liverpool side a shaft similar to that at Birkenhead has been sunk. The distance from the Liverpool shaft to the Birkenhead shaft is as nearly as possible one mile, and, taking into consideration the length of the present borings, there are left some 1,300 yards yet to be cut through, which, at the estimated rate of progress of 24 yards per week from the two ends, should be accomplished in very little over a year, as stated. Although the trial borings have an upward gradient of 1 in 500 from each shaft, the tunnel, which will be on a higher level, will descend towards the centre, and any water which may find its way into it will drain towards the centre, whence it will be carried into the trial boring, and thus to shafts at each end, to be pumped up by the engines.

Mission-Room, Everton Valley.—A new school and mission room, built for the parish of St. Chad by the Liverpool Education Board in connexion with the Church of England, has been opened. The building is of galvanised and corrugated iron, and lined with pitch pine, stained and varnished. It is about 100 ft. long, and 40 ft. wide. As a school it will accommodate 500 children, and as a mission-room it will seat 850 people. The building was erected under the supervision of Mr. Joshua Siddeley, the acting member of the committee, by Messrs. H. G. Brown & Co., of Smithdown-lane, at a cost of about 1,000*l.*

CRACKING AND CRUSHING CONCRETE.

A CORRESPONDENT writes to say he thinks there must be some mistake in the table we gave (p. 649, *ante*) of the cracking and crushing loads of Mr. Lascelles's concrete blocks, because the figures for the cracking are identical with those for the crushing loads.

There is, however, no mistake, and Mr. Kirkaldy explains by saying that, unlike most materials, there was no perceptible space of time between the cracking and crushing; in fact, when it had stood all the pressure it was capable of, it gave way at once in every instance."

PATENT RECORD.*

ABRIDGMENTS OF SPECIFICATIONS

Published during the Week ending June 4, 1881.

4,124. T. H. Mitchell, Strawberry Hill. Ventilating sewers, &c.

Pipes, with inverted funnel-shaped junctions to the sewers, are led to the chimneys of houses or the ashpits of boiler furnaces, and thereby the noxious gases are drawn out of the sewers. Oct. 11, 1880. Price 6d.

4,332. P. Bawden, Notting Hill. Manufacture of bricks and tiles.

The pug-mill has a vertical shaft, with knives passing through it, by which the clay is cut and ground and pressed downwards through the hole in the bottom of the mill into the moulds which pass underneath. The pug-mill shaft passes through the bottom of the pug-mill and actuates by suitable gearing an endless band or chain of moulds, which in section are like an H. They are joined together at the lower part, the upper part being the mould for the brick. These moulds have palette-boards in them, which rest on rails which are above the gearing wheels. A wire-cutting frame is also fitted to cut the bricks off at the ends of the the moulds. As the moulds turn over the wheels, the palette-boards with the bricks on them are lifted out by the rails, and the bricks are delivered on a page. The empty moulds are then washed by revolving brushes, and passed through dry sand. The palette-boards are supplied to the moulds by a belt passing round pulleys. Oct. 23, 1880. Price 8d.

4,333. P. Montague, Paris. Kilns.

These have a continuous fire, and are of a curved form in the interior. The fire is at the upper part, and the bricks are assisted out by a movable endless apron. The grate is formed of small iron bars for supporting the bricks, and by means of a screw a truck is raised, the open top of which passes between the bars and raises the charge. The bars can then be withdrawn, and the truck is lowered, carrying the charge. The bars are then replaced and the truck withdrawn. Bricks can be added at the top as the charges are lowered. Oct. 23, 1880. Price 6d.

4,366. J. Amson, Birmingham. Draught preventers, &c.

A metal frame is led into the top, bottom, or sides of the door, window-sash, &c., which is open at the outer face, so as to allow of the passage of the lath contained therein. A rod, with slots working over fixed pivots, is placed at the back of the frame, the end of which projects beyond the end of the metal frame, so as to come in contact with the frame of the door or window in the act of closing, and be driven forward. Cranked levers are attached to the rod, bearing upon springs between the bar and the lath, which force out the lath, and thereby prevent any draught. (*Pro. Pro.*) Oct. 26, 1880. Price 3d.

4,375. P. Balmer, Scarisbrick. Continuous kilns for burning bricks, &c.

The chimney is placed outside the kiln, and the flue brought underground into it. Each of the chambers, which are in two rows, back to back, has openings dipping down to the flue, and there are openings in every partition dividing two chambers. All these openings are fitted with dampers worked from the outside. In one of the buttresses at the end is placed the furnace, opening into the first chamber. By this method some of the chambers may be firing, at the same time that others are cooling, or emptying, or refilling. (*Pro. Pro.*) Oct. 27, 1880. Price 2d.

4,381. W. Forsyth, Worcester. Composition or cement.

This cement is made of the following ingredients:—Powdered litharge, 11 oz.; vegetable black, or whatever colour is required, ½ oz.; pure glycerine, 4 oz. The mixture is brought to a thick paste, and is ready for use. Oct. 27, 1880. Price 2d.

4,441. F. King & G. Green, Gloucester. Alarm and indicating apparatus for boilers, cisterns, &c.

A float is attached to a counterbalanced lever, to which is fixed a cranked iron, in which is an insulated spring. When this is lowered by the rising of the float, it connects to a wire, and rings an electric bell. (*Pro. Pro.*) Oct. 30, 1880. Price 2d.

* Compiled by Hart & Co., patent agents, 28, New Bridge-street, E.C.

THE ALEXANDRA PARK ESTATE.

LAST week a portion of the Alexandra Park building estate was offered for sale within the Palace grounds by Mr. Richard J. Collier. The property consisted of seventy-seven lots of freehold building land, having frontages to the Park-road and Colney Hatch-lane. The average dimensions of the several plots offered were 26 ft. frontage by a depth of 190 ft., one plot having a frontage of 88 ft. and a depth of 100 ft. Several of the plots were sold, those having 26 ft. frontage and 190 ft. in depth, realising an average of 130*l.* each; whilst the plot having a frontage of 88 ft. and a depth of 100 ft., fetched 156*l.*

SALE OF BUILDING LAND AT KILBURN.

LAST week Messrs. Fox & Bousfield offered for sale at the Auction Mart, a freehold building estate, twelve acres in extent, and situated in a very commanding position, on the summit of Shoot-up Hill, in the parish of Hampstead. The property was submitted to competition by order of the directors of the Grand Junction Waterworks Company, who some years ago purchased it with the intention of constructing high-level reservoirs upon it, its lofty altitude rendering the site specially suitable for such a purpose. After a close competition the property was sold for 14,800*l.*, being at the rate of a little more than 1,200*l.* an acre.

SALE OF FREEHOLDS IN WOOD-STREET.

WOOD-STREET, in the City, is well known as one of the main centres of City business, and the great value of freehold property in this locality is indicated by a sale which took place at the Auction Mart last week, conducted by Messrs. Norton, Trist, & Watney, and which, in the aggregate, realised a sum approaching to 40,000*l.* From 10*l.* to 11*l.* per foot was the average amount which the various properties commanded, as will be seen by the figures which follow. Nos. 95 and 96, which occupy an area of 1,200 ft., and let on lease for a term of thirty years, from 1879, at 600*l.* per annum, were sold for 13,500*l.* [Two adjoining properties were next sold, one of which, occupying an area of 540 ft., realised 5,200*l.*; and the adjacent property, also occupying an area of 540 ft., was sold for 5,100*l.*; the entire property realising 23,800*l.* Premises in Bull's Head-passage, Wood-street, were also included in the sale, amongst which were those covering an area of 3,500 ft., which were sold for 6,700*l.*; and the Bull's Head public-house, having a frontage to Wood-street of 12 ft., and containing an area of 500 ft., was sold for 5,200*l.*]. The entire proceeds of the sale amounted to 35,700*l.*

All the properties bracketed above are let on low rents for terms expiring in a year or two, when, the auctioneers informed us, the present rentals may be expected to be largely increased, and that the low rentals now paid are no indication of value, but that the lease of Nos. 95 and 96, for thirty years, at 600*l.*, may be regarded as a guide to the future rentals of the other property.

SURVEYORSHIP ITEMS.

Ventnor.—At the meeting of the Ventnor Local Board, held last week, the Board unanimously resolved to increase the salary of their surveyor, Mr. R. S. Scott, from 105*l.* to 150*l.* Several members testified to the efficient manner in which Mr. Scott had discharged his duties.

Worcester.—At the last meeting of the Worcester Town Council, the question of giving the surveyor 200*l.* in addition to his salary of 400*l.*, wherewith to pay his assistants, gave rise to a long discussion, resulting that, by twenty-two votes to eight, the motion to pay 200*l.* a year was carried. The minority were in favour of giving 150*l.*

Ledbury.—At a meeting of the Ledbury Highway Board on the 7th inst., it was resolved to increase the salary of the surveyor (Mr. C. E. A. Lloyd) by 32*l.* 10*s.*, making it up to 216*l.* per annum.

THE MINIMISATION OF SMOKE.

THE Kyrle and National Health Societies are arranging an Exhibition of Improved Heating and Lighting Appliances, to be held at South Kensington, London, on the 24th of October, and to close on the 26th of November next. A great number of new patents have been taken out in response to the public demand for them, and there are evident indications of a change from the old and barbarous state of things which occasions so much waste and discomfort. The presidents of the Exhibition are H.R.H. Prince Leopold, Duke of Albany, K.G., and the Duke of Westminster, K.G., assisted by an influential executive committee. A large number of applications for space have been received in advance of the particulars of the Exhibition, and communications should be addressed at once to Mr. G. R. Redgrave, Works Office, South Kensington Museum, as no applications can be entertained after the 30th inst. Prizes in money and medals will be awarded.

RIGHT OF BUILDINGS TO LATERAL SUPPORT.

THE COMMISSIONERS OF WORKS AND PUBLIC BUILDINGS *v.* ANGUS AND DALTON.

IN this important case, which has been before the courts for several years,* judgment was given by the Lord Chancellor in the House of Lords on Tuesday last in the appeal brought by the appellants, the defendants below, against an order of the Court of Appeal reversing a decision of the Queen's Bench Division, setting aside a verdict in favour of the respondents, the plaintiffs below. The case is one of considerable importance, inasmuch as it settles the vexed question of the right to the lateral support of the adjoining soil.

The judgment of the Court of Appeal was affirmed by their lordships (the Lord Chancellor, Lord Coleridge, Lord Blackburn, and Lord Watson, who were all agreed), and the appeal was dismissed, with costs.

We shall return to the subject.

* See *Builder*, vol. XXXIV. (1876), p. 716; vol. XXXVI. (1878), p. 313; vol. XXXVII. (1879), p. 27.

PROVINCIAL NEWS.

Hereford. — New Soda-water Works for Messrs. Davies & Co. have been opened. Some years ago Messrs. Davies acquired by purchase the old "Hereford Coaching Yard," situate in Catherine and Coningsby streets, upon the site of which their new premises have been erected. The buildings cover nearly half an acre of ground, and form three sides of a square. The warehouse and stables are on either side of the square, and the soda-water factory is built in the centre. The factory, including the office, measures 100 ft. in length, 20 ft. in width, and is lofty in proportion; and, in addition to the ordinary one, there is a supplemental roof of varnished wood, whose purpose is to prevent any impure matter falling into the waters. The machinery is by Messrs. Hayward Tyler & Co., of London. Mr. W. W. Robinson, of Hereford, is the architect of the buildings.

Truro.—It is proposed either to erect a new Corn Exchange for Truro, or to acquire premises recently erected and to convert them to that purpose. Mr. Silvanus Trevail, architect, has been consulted in the matter.

Ripponden.—Fifteen or sixteen months ago No. 1 Mill, belonging to the Commercial Company, was destroyed by fire. The services of Mr. R. Horsfall, architect, of Halifax, were called into requisition, and a good, substantial, fireproof mill, of four stories high, has been erected in its place. The mill is now being filled with machinery by Messrs. Platt Brothers, of Oldham, and Messrs. Curtis, Sons, & Co., Manchester. The steam-engine and shafting have been entrusted to Messrs. Wood Brothers, of Sowerby Bridge.

Brighton.—The foundation-stone of a new Workmen's Club for the parish of St. Nicholas, Brighton, has been laid. The site is in Centurion-road. The club, which will be a red brick building, will have four floors, two of which, however, — the kitchen and superintendent's apartments over,—will be below the street level, owing to the conformation of the ground, which rises very abruptly from back to front, from east to west; bringing the mission-room (or extra reading-room if required) on the ground-floor, with the club-room over. These are each 25 ft. long by 14 ft. wide. Messrs. Lynn & Sons have taken the contract at the sum of 790*l.*

Doncaster.—On the 1st inst., a new Court-house, which has been erected behind the Guild-hall, was opened by the Mayor. This new justices' room was rendered necessary in consequence of the old room being required for extra cell accommodation. The old room was anything but suitable for the purposes required, being low, dark, and insufficiently ventilated. The present room has been built from plans of Messrs. Parry & Walker, by Messrs. Harold Arnold & Sons, of Doncaster. It adjoins the Guildhall, and communicates with the new cells by an underground passage.

St. Neots.—Extensive alterations have been made in connexion with the magistrates' room at St. Neots Police-station. The work has been carried out by Mr. Wm. Osborne, builder, the architect being Mr. R. Hutchinson.

MILDEW.

SIR,—I am repairing a house, some of the walls in which are covered with mildew,—on the paper,—due, I think, to bad ventilation.

Saltpetre bricks are suggested as being the cause, but the growth has no taste, but a smell of decaying fungi.

The paper is being stripped off. Would you kindly tell me what composition, if any, to apply to the walls to destroy growth of the mildew in the future, or whether sheet lead under the paper is advisable? Having just read your article on "Damp," I thought perhaps some correspondent would give me a hint.

A READER.

THE PLUMBING LECTURES AT THE SOCIETY OF ARTS.

SIR,—I was present at the lecture given by Mr. Hellyer on Tuesday night, and agreed with almost all that gentleman advanced. There were those in the room, however, who held different views, and some gentlemen wished to know if a discussion would be allowed. Now, I think the chairman ruled wisely in refusing to allow a discussion at that time, but I would suggest that it would greatly increase the interest taken in these lectures, also the ultimate stock of information gained from them, if it was known that at the end of the course an evening would be set apart especially for discussion, limiting each speaker to ten minutes,—the speakers to be working plumbers.

In my opinion, by this means we should get at the views of the working plumber very much better than by letters in the papers, as suggested by the chairman.

DANIEL EMPTAGE.

ARCHITECTS AND QUANTITIES.

SIR,—Your correspondent, "Quantity Man," in your issue of the 4th inst. (p. 715), closes his letter on the above subject with these words,—"When I hear an architect gravely argue that he ought to act as surveyor, I wonder much whether he carries the principle further and wishes surveyors to turn architects? One idea is as good as another!"

Three or four years ago I superintended the erection of a famous public-house, costing about 8,000*l.*, at the same time planning and obtaining the necessary consents from the authorities for building on the other part of the estate. The building mentioned was finished, and I continued to be friendly with my client. Soon after the other buildings were being erected, but not under my superintendence, but, *mirabile dictu!* under that of the quantity surveyor's measuring clerk! I had to console myself that I had not sacrificed a principle for the sake of gain, as my supplanter had no compunction in doing,—after making my client's acquaintance during the measurement of the building by making frequent friendly visits to the new public-house in question. "But" it may be remarked by some of your readers, "it is excusable in a quantity surveyor's pushing clerk. A master would not do such a thing."

Again, I had occasion to call on a quantity surveyor with whom I had been associated in business. My eyes happened to alight upon the title of a set of drawings from which the quantities were being taken off. "Messrs. ——," I observed; "not of ——, surely?" "Oh! yes; your friends." "How do you know they are my friends?" I rejoined. "I have heard them speak of you, and I come up with Mr. —— every morning." "Indeed! Are you the architect, then?" "Yes." I leave your readers to imagine why I made no further observation, and turned the story. This was not, I wish it to be remembered, a quantity surveyor's *clerk*, but an honourable master. "We all are honourable men." What a snugly-packed nut-shell! Five per cent. commission, 2 (?) per cent. for quantities, and 2½ (?) for the measuring up. Of course, the owner knew nothing about the two latter. What could have fitted better? To say nothing of the opportunity of adjusting any *little* error! "Look on this picture, then on that."

I, also, wonder if "Quantity Man" ever acted as architect, and what he would do were he in such a dilemma as to have the opportunity proffered him.

I enclose my card.

H. H. B.

CHURCH-BUILDING NEWS.

Sheepwash.—The Church of St. Lawrence, in the little village of Sheepwash, twelve or fourteen miles from Torrington, Devon, was re-opened a few days ago, after restoration under the direction of the late Mr. J. F. Gould, architect, Barnstaple, who had practically finished the work just before his decease. Of the original church nothing remains of any archæological interest. The general fabric was found to be in a very dilapidated condition. It was hoped that the lower stage of the tower might have been preserved, but in the course of the work this was found to be impracticable. In designing the new building the general lines of the old walls were adhered to, except that the chancel is extended about 3 ft. to the eastward, and a transept has been added to the north side of the chancel. The tower at the west end on the site of the original is now carried up two stages, slightly above the level of the ridge of the nave. The design for this shows another stage, with compact belfry windows, and a saddle-back roof with coped east and west gables, side gables, with single-light louvred windows and wrought-iron finial, which, when completed, will be a very good example of a quaint style of tower, of which few, if any, examples exist in the county. The new building has been designed in the spirit of the style prevailing about the latter part of the thirteenth century. The church consists of nave (about 33 ft. by 22 ft.), with western tower and south entrance 7 ft. square, transept 22 ft. by 16 ft., with adjacent north transept, now used as a vestry. The walls throughout are built of local stone, strengthened with massive buttresses, the slopes of which, together with the quoins, copings, label mouldings, weatherings, window, and other dressings are of Hatherleigh stone, the interior being plastered, leaving the stone dressings to arches, doors, and windows exposed. The nave is divided into four bays by the roof principals, which rest on stone corbels, and the space between the rafters is plastered. The chancel roof has three bays, divided by bold principals, with ends left for carving, resting on oak wall-plate and corbels, with backs of rafters boarded. The body of the church is divided from the chancel by a moulded arch springing from two shafts with caps and bases. The aisle and chancel floors are paved with tiles from the works of Messrs. Maw & Co., those of the chancel being of a very handsome design, with steps of Devon marble. The chancel fittings are of oak, the choir-seats and reading-desk having traceried fronts. The pulpit, lectern, altar-table, and other fittings, are all oak, the framing being of Memel wainscot, and the panels of old oak from the original building. The altar-rail is also of oak, with wrought-iron standards. The seating of the nave has solid bench-ends, with moulded capping on top. The church is heated by one of Porritt's stoves, the pilot stove of which also heats the vestry. The original contract was taken by a builder who unfortunately was unable to carry it out, and the completion of the work was then entrusted to the clerk of the works, Mr. Charles Oatway, of Barnstaple, who also superintended the renovation of Petrockstowe Church, which was another of Mr. Gould's restorations. The east window was presented by Mr. R. Southcombe, of Stoke. The whole of the seating of the nave is in pitch pine. The glazing of the windows was done by Mr. Pepper, of London; the wrought-iron massive door-hinges were made by Messrs. J. D. Young, of Barnstaple; and the plumbers' work was done by Mr. Eastmond, of Torrington.

Putney.—The foundation-stone of what is intended to be the permanent structure of Emmanuel Church (Free Church of England), Putney, has been laid. The new church will accommodate 350 people, but provision will be made for the erection of a gallery if at any future time it should be found necessary to increase the number of sittings. There are also schoolrooms in the basement for 150 children. The amount of the first contract is 2,183*l.* The church, which is in the Gothic style of architecture, has been designed by Mr. W. G. Lee, the contractor being Mr. W. R. Williams, of Putney.

SCHOOL-BOARD SCHOOLS.

Leicester.—The new industrial schools near Desford, erected by the School Board for Leicester, were formally opened the other day by Mr. Mundella, Vice-President of the Committee of Council on Education. The buildings are situated on an elevated position, commanding a fine agricultural view on all sides, and surrounded by sixty acres of land. The design, which is of the Queen Anne type, is executed principally in red bricks, the upper parts being of rough-cast plaster, while the roofs are covered with dark red tiles. The ground on which the building stands is about 200 ft. square, inclosing a working and play yard about 120 ft. square, and laid with asphalte by the Val de Travers Company. The building comprises some 170 rooms, including the superintendent's and teachers' rooms, the different kinds of trade workshops, board-room, schoolroom and chapel combined, and four dormitories containing beds for from 150 to 200 children, with baths, store-rooms, &c. The agricultural buildings are attached, but outside the inclosed yard. The water-tower contains four galvanised iron tanks supplied with spring water from a well 100 ft. deep, and with the soft or rain water from a tank beneath the ground containing 30,000 gallons, into which all the water from the roofs, passing through filters, is conveyed. From these iron tanks a hard and soft water service is laid through all the buildings. The buildings are heated by steam passing from the boiler through 2-in. pipes. The laundry and other machinery is worked by a small engine. The cooking is to be done by gas and steam. Earth-closets are used, but the general sewage is conveyed from the buildings through 12-in. drain-pipes to a cess or soil tank situated about 400 yards from the buildings, and is to be utilised on the land. The general contractors for the works were Messrs. T. & H. Herbert, of Leicester. The heating, cooking, steam supply apparatus, &c., was executed by Mr. Ashwell, engineer and contractor, Leicester. The new gasworks are by Mr. Bower, of St. Neots, Hunts. The architect is Mr. Edward Burgess, of London and Leicester, whose clerk of works was Mr. Dale. The cost of the buildings has been 20,000*l.*

Great Yarmouth.—The new Board schools at the North End have been opened. They have been erected on a plot of ground having frontages to Ramp-row and to a new road extending from Ramp-row to Garrison-walk. The site is about 195 ft. by 150 ft. The main buildings form a group of which the infants' department is the centre, the boys' and girls' departments forming wings on either side. The principal front is to the south, the buildings being set back from Ramp-row so as to leave open spaces for playgrounds in front, these having covered playsheds; the offices, with lavatories, &c., are arranged at the back of the schools. The schools are of Gothic character, and are built of red brick, with dark mortar joints. The moulded and ornamental brickwork has all been specially designed by the architects, and has been supplied by Mr. G. Gunton, of Costessey. The drainage has been specially attended to, and the soil-pipes, &c., are disconnected and ventilated by a Banner's cowl. The schools are heated by Shorland's Manchester grates; fresh cold air is admitted into the rooms by means of Sherringham's ventilators in the walls, made to open and close at pleasure; the heated and impure air is extracted by means of Howarth's revolving ventilators in roofs, and the openings from the same to the rooms are capable of being regulated as required. Accommodation is provided according to Government requirements for 610 children in the three groups, with three rows of desks. The cost is as follows:—Contract amount, 3,876*l.*; fittings and furniture (about), 150*l.*; architect's commission, 210*l.*; total, 4 236*l.*; cost of site and legal expenses, &c., 1,424*l.*; total, 5,660*l.*; cost of schools per child, exclusive of site, 6*l.* 18s. 10½d.; cost of schools per child, including site, &c., 9*l.* 5s. 6¾d. The contractors are Messrs. Beech & Cork for bricklayer's and plasterer's work, &c., and Mr. B. Springall for carpenter's, joiner's, and ironmonger's works; the sub-contractors being Mr. Stanley, mason; Messrs. Dawber & Son, slaters; Mr. Nudd, road maker, &c.; Mr. Goffin, plumber, &c.; Mr. Rainer, gasfitter. The architects are Messrs. Bottle & Olley. The buildings have been completed, we are told, by the stipulated time, and there have been no extras of any description.

VARIORUM.

THE *Art-Journal* for June illustrates the works of Messrs. Henry and Albert Moore, and includes a paper on "Art applied to Town Schools," by Mr. E. R. Robson, and one of a series on our "Household Furniture: its past History and its present Development," by Mr. G. T. Robinson. This particular paper treats pleasantly and usefully of dining-room tables. Both papers are illustrated.——"Picturesque America" (Cassell & Co.) will make the great country of which it treats better known amongst us than it is at present. Part III., now issued, illustrates most effectively "Look-out Mountain and the Tennessee" at Chattanooga. The descriptive matter is well written.——Ward & Lock's "Universal Instructor" furnishes a large amount of knowledge for a small price. The thirty-six parts, when completed, will form a library of themselves.——The June number of *Decoration* (Sampson Low & Co.) includes ten designs for dining-room chimneypieces, the result of a competition instituted by the proprietors of the journal. Some of these are very good.——The new issue of "Dickens's Dictionary of London, 1881," shows that continued care is given to its revision and improvement.——"Waterworks Statistics, 1881," edited by Chas. W. Hastings (John Smith & Co., Long-acre), although a small affair, gives some valuable information from actual returns from towns named.——A very cheap yet very nice edition of "The Life of George Stephenson," by Samuel Smiles, LL.D., has been published by Mr. Murray as a fitting and necessary outcome of the centenary. It is an admirable book, as we have taken occasion to say more than once, and the present issue, with a forcible preface by Mr. Smiles, twenty-four years after the publication of the first edition, will doubtless be sold in thousands.——*English Etchings* (Reeves, 185, Fleet-street), is the title of a monthly publication of original etchings by English artists just now commenced, the main object of which is to increase the popular appreciation of the art. The first part gives four very pleasing works for 3s. 6d.——"A Treatise on Mechanical Engineering," by Francis Campin, C.E., which forms No. 223 of "Weale's Rudimentary Series" (Crosby Lockwood & Co.), is for the main part an abridgement of the author's larger treatise on the subject, published some years ago; but it has been improved by omissions and additions.——"The Earl of Beaconsfield: a Biographical Memoir," by Edward Walford, M.A. (F. Warne & Co.), gives, for a few pence, a great deal of interesting matter concerning the deceased statesman and novelist, pleasantly and discreetly communicated.——"The Gas and Water Companies Directory, 1881," edited by Chas. W. Hastings (22, Buckingham-street, Strand), would seem to be indispensable to all who interest themselves in these subjects. The list of Continental gas companies might still be improved.

Miscellanea.

Roman Altar at Colchester.—Concerning the recently-found Roman altar here, Mr. Chas. Golding writes,—The inscription is,—

MATRIBVS
SVLEVIS
SIMILIS. ATTI. F.
CI. CANT.
V. L. S.

and may, I think, be read thus:—Similis was a son of Attius, and he, in discharge of a vow, dedicated an altar to Sulevi. Ci. and Cant. are indicative that he was a citizen of probably Cantii, now our kingdom of Kent; although Cant. would bear the reading of Cantæ, which was the kingdom of the north-east of Britain. Sulevi occurs on an inscription found at Bath. V. L. S. may be *Votive Legatio Senatus, i.e.*, the Embassy taken to perform the vows of the Legion of the Senate; but we know that V. stood for *Quintum*, therefore, I prefer to read it as the Fifth Legion of the Senate.

Value of City Property.—A plot of land, formerly the site of Allhallows' Church, at the corner of Bread-street and Watling-street, having an area of 3,270 ft. super., and let at 1,800*l.* per annum, together with the reversion to the buildings thereon in seventy-eight years hence, has just been sold by Messrs. Jones, Lang, & Co., 3, King-street, Cheapside, for 43,200*l.*, or over 13*l.* per foot super.; or about half a million per acre.

Sanitary Assurance Association.—The first general meeting of the members and the honorary council of the Sanitary Assurance Association since its incorporation in February last was held on the 10th inst., at the offices of the Association, 5, Argyll-place, W. In the unavoidable absence of Sir Joseph Fayrer K.C.S.I., F.R.S., the president, Professor Hayter Lewis, F.S.A., vice-president, occupied the chair, and was supported by Sir Richard Temple, bart., Captain Douglas Galton, C.B., F.R.S., Mr. Romanes, F.R.S., Mr. George Aitchison, A.R.A., Professor Corfield, M.D., Mr. John Whichcord, F.R.I.B.A., Mr. Mark Judge, and Mr. H. Rutherford. Professor Corfield (chief sanitary officer) and Mr. Judge (surveyor) related the progress of the Association, and reported on the work of sanitary inspection that had been done. The property which had been placed on the assurance register varied in value from houses rated at 60*l.* a year, in which the total fee to subscribers for report, supervision of work, and certificate is 2*l.* 2s., to houses rated as high as 700*l.* a year, with proportionately increased fees. The Association undertake the inspection of the smallest class of property, and no fee is charged to subscribers for a single house rated at 20*l.*, while the fee is only half a guinea for houses rented at 40*l.* In the discussion which followed, Sir Richard Temple, Capt. Douglas Galton, and Mr. Whichcord spoke strongly in support of the objects of the Association, and the Council were requested to take steps to make the Association as widely known as possible, and particularly to call the attention of the proprietors of large building estates to the advantages which would accrue if the certificate of the Association were made essential to the granting of leases. Professor Hayter Lewis, in acknowledging a vote of thanks for presiding, said he hoped the Council would have still greater progress to report when the time for the annual meeting came round; he trusted that speculating builders would soon recognise the value of the certificate of the Association, for there could be no doubt that houses certified as in a satisfactory sanitary condition by the Association would be of greater value in consequence.

The Roman Villa, near Brading.—The second edition or the "Guide to the Roman Villa, recently discovered at Morton, between Sandown and Brading, Isle of Wight," which has been drawn up by the excavators of the buildings, Messrs. John E. Price, F.S.A., and F. G. Hilton Price, F.G.S., contains an account of nineteen chambers which had been laid bare up to the time of its issue. During the last few weeks these gentlemen have uncovered a dozen more chambers, making thirty-one in all. Of the twelve just brought to light, two are of large size, one of them measuring 54 ft. by 22 ft. It had pillars on two sides to support the roof placed against the walls, as the discoverers found large blocks of stone and concrete which formed the foundations. There were smaller chambers flanking on either side this very large one. Continuing due east, and joining the last named, is another room nearly 40 ft. long by 32 ft. broad, and on the south and east sides of it are more solid blocks of concrete at equal intervals. On the north side, at a distance of 8 ft. from the north wall, are three of these blocks, corresponding with those on the south side. Adjoining the wall of the last-mentioned chamber is a well-house, with two semicircular apses. The well itself has been sunk to a depth of 80 ft, and water has been found; still, the bottom has not been reached as yet. A considerable number of coins found range in date from Domitian (A.D. 81–96) to Valentinian (A.D. 383–392).

Drinking Fountain.—On the 10th inst. a new drinking-fountain and a cattle-trough of polished granite were formally opened on the Chelsea Enbankment, near the old church. Mr. John Lee, secretary of the Metropolitan Drinking Fountain and Cattle Trough Association, said the structure was the gift of a lady, who has defrayed its entire cost, in memory of her late husband, Mr. George Sparks, formerly judge at Madras in the East India Company's Civil Service. The fountain had been erected by the Association from designs prepared by Mr. Charles Barry. Its entire cost, including a system of drainage and pipe-work, was 600*l.*, and the donor has intimated her intention to endow it with a sufficient sum to insure its future maintenance and a water-supply in perpetuity, so that it should be no tax either on the funds of the Association or on the funds of the parish.

Babylon and Egypt.—At the last meeting of the Society of Biblical Archæology, held at 9, Conduit-street, the president, Dr. S. Birch, in the chair, Mr. Theophilus G. Pinches, of the British Museum, read an account of Mr. Rassam's discoveries at Aboo-habba. This site, which is about sixteen miles south-west of Bagdad, the explorer identifies with the principal seat of the Babylonian sun-worship. The Chaldean historian Berosus names the city Sippara, and under the same name it occurs times without number in the cuneiform inscriptions. Berosus assigns to it an antediluvian origin. The antiquities unearthed here are mostly from the temple of the Sun-god, called E-Barra. These consist of an inscribed stone, 1 ft. high by 9 in. wide, the earthenware chest in which it was kept, a mould partly covering the stone, and a couple of cylinders bearing the name of King Nabonidus. At the top of the obverse of the tablet is represented the Sun-god sitting on his shrine. Above the shrine are two small figures, seemingly guiding with cords the course of the sun, which stands on a table below. Ministers of the god lead into his presence the royal worshipper, by whose order the tablet (which was exhibited at the meeting) was cut. The inscription names several very ancient kings of Babylon. Dr. Birch next gave an account of the hieroglyphical inscriptions, all of a religious nature, found in the four pyramids, belonging to the fifth and sixth dynasties, the opening of which Pharaonic tombs was one of the last cares of the late Mariette Bey. The pyramid of King Unas (Dyn. V.) is the most ancient of the four. The other three,—namely, those of Merira Pepi, Merenra Haremsaf, and Neferkara Pepisnab, all belong to the sixth Pharaonic house. The mythological texts engraved on the walls of these extremely ancient pyramids distinctly prove, Dr. Birch showed, the early currency of the Osiris myth in all its essential parts, as well as of the doctrine of the immortality of the soul.

The Awards at the Melbourne Exhibition.—The Melbourne correspondent of the *Times* writes:—"A little civil war has been going on between the Executive Committee of the Exhibition and the Fine Arts Committee. A jury of experts having been called in to revise the awards of the fine arts jury, its suggestions were referred to the Fine Arts Committee, which, in its turn, gave judgments of its own. The Executive Committee refuses to accept the report of the Fine Arts Committee, and demands that the latter shall simply decide as to which shall be taken,—the findings of the original jury or the findings of the revision jury. *Sub judice lis est*,—so irritating to artists,—in this delicate question. Another difficulty has arisen touching the Machinery division. This will interest many home and foreign manufacturers. Attempts have been made to override the verdicts of the Machinery jury, although they were confirmed by experts. Much ill-feeling has thus been generated among the parties concerned."

Royal Horticultural Society.—The case in the High Court of Justice, Chancery Division, before Mr. Justice Fry, "The Commissioners of the Exhibition of 1851 *v.* The Royal Horticultural Society, has been concluded. The plaintiffs claimed delivery of about twenty acres of ground at Kensington-gore, which was demised by them to the defendants on the 20th of July, 1860, and of an additional piece of ground subsequently conveyed. The plaintiffs were incorporated by Royal Charters of 1850 and 1851, by the latter of which they had power to dispose of the waste lands of the Exhibition of 1851. The defendants are a very old chartered incorporation, their deed being dated in 1749. His lordship held that the claim of the plaintiffs was not sustainable, and dismissed the action with costs.

Prize Essays on National Thrift.—Early in the year, the directors of the National Thrift Building Society, 33, New Bridge-street, offered several prizes for the best essays on this important subject, to be written by competitors of either sex, but under twenty years of age. The adjudicators have made their award, and the successful essays are about to be published in the columns of *Capital and Labour*.

Wickhambreux, Kent.—This church has recently had new seats put to the nave, of unvarnished pitch-pine, made by Messrs. Knight, of Gloucester, from the designs of Mr. Ralph Nevill, F.S.A., architect. New lamp-brackets of wrought iron, and other improvements, have also been carried out.

Visit of the Architectural Association to Greenwich Hospital.—On Saturday afternoon last about eighty members of the Architectural Association visited Greenwich Hospital, where they were received by Mr. Loughborough, clerk of the works, and by him conducted pretty well all over the building. Assembling in the Painted Hall, they passed to the chapel, and thence up and down several staircases; along almost interminable corridors; through examination-halls and rooms, laboratories, drawing-offices, and other apartments devoted to the work of the Royal Naval College; through club and billiard rooms used by the students of the college; and even into kitchens. The visitors ultimately found themselves in the Museum, and there they had an opportunity of seeing the "Nelson relics" and other objects. The rapid peregrination of the buildings in the way we have described was not wholly devoid of interest to the visitors as members of the general public, but as students of architecture they had little or no opportunity of learning anything about the buildings, although this, we take it, is the main object of such visits.

Wright's Patent Brush.—A company has been formed, as our advertising columns show, to work the patent inventions of Mr. Edward Wright for improvements in the manufacture of all kinds of paint, distemper, and other brushes. The improvement consists, as we have already pointed out, first, in securing the bristles so firmly between two metal rings under great pressure that it is impossible for them to become loose or be pulled out; and, secondly, in a handle which has a socket into which the knot of bristles so made is placed and held there firmly so as to give an amount of elasticity and length of wear far superior to the ordinary brushes now in use, at the same time affording the facility for removing the worn bristles and substituting new ones as often as required.

Bursting of a Water Tank.—On Tuesday a large water-tank upon the top of a tower at Chelmsford suddenly burst. The tank, which was constructed of cast-iron plates to hold 40,000 gallons, was being pumped full of water after having been caulked. When almost full it burst with a loud report, three sides of it falling to the ground. There were two lads in the tower at the time, but neither of them was hurt. The tower has just been erected by the Chelmsford Rural Sanitary Authority, in connexion with the water-supply of Great Baddow and Springfield. Were there any tie-rods?

Metropolitan Board of Works.—At the meeting of the Fulham Board of Works last week, the election of a representative at the Metropolitan Board of Works took place. A unanimous vote of thanks was accorded to Mr. Lammin, who has been the representative for the last nineteen years, and who was proposed for re-election. Mr. Brown was also proposed. The voting was by ballot, and the numbers were:—Brown, 24; Lammin, 11; whereupon the chairman declared Mr. Brown elected.

"Evans's" and the Falstaff Club.—With reference to a paragraph under this heading in our last, Mr. J. B. Amor writes to say that, although he has placed the property in the open market, the negotiations with the Falstaff Club are still going on, and will probably be brought to a successful issue.

Cleland.—A new presbytery is in course of erection at Cleland, near Motherwell, N.B. Messrs. Pugin, of Westminster, are the architects.

TENDERS

For alterations to the Coach and Horses public-house, 83, Long-lane, Borough, for Mr. G. R. Dawes. Mr. George Judge, architect:—

H. Everitt	£479	0	0
W. Shepherd	429	0	0
J. B. Axford	415	0	0
T. L. Green	377	0	0
J. Hoare & Son (accepted)	364	0	0
S. Kipps	289	0	0

For building mission church, London Fields, in connexion with St. Paul's, Haggerstone:—

Tally	£1,169	0	0
Boyce	1,149	0	0
Thomerson & Son	1,090	0	0

For additions to Board Schools, Croydon. Mr. Chas. Henman, architect. Quantities by Mr. Chas. FitzRoy Doll:—

Hollidge & Stuart	£1,687	0	0
J. Smith & Sons	1,655	0	0
W. Marriage	1,650	0	0

For workshops and manager's house, Brunswick Park, East Barnet, Herts, for the London Stereoscopic and Photographic Company:—

J. H. Garratt (accepted)	£1,510	0	0

For repairs, &c., to houses at Myddelton-place, Clerkenwell, Mr. W. P. Griffith, architect:—

Fricker	£268	0	0
Burton	199	0	0
Martin	168	0	0
Cornwell	153	0	0
Baylis	135	8	0

For alterations and additions to the Grave Maurice public house, St. Leonard's-road, Bromley. Messrs. Wilson, Son, & Aldwinckle, architects. Quantities supplied:—

Outhwaite	£2,290	0	0
Moyle	2,210	0	0
Bangs	2,165	0	0
Cox	2,130	0	0
Greenwood	2,099	0	0
Hearle	2,093	0	0
Beale	2,049	0	0
Shurmur (accepted)	1,980	0	0

For repairs and restorations to the parish church of St. Mildred, Bread-street, Cheapside. Mr. T. Milbourn, architect:—

General Repairs, &c.

Ramsey	£1,288	0	0
Colls & Sons	1,068	0	0
Hall & Beddall	1,033	0	0
Macey & Sons	823	0	0
R. Conder (accepted)	706	0	0

Hot-water Apparatus.

Wontner, Smith, & Co.	£123	0	0
Jones, Dray, & Co. (accepted)	115	0	0

Brass Work.

Gardner & Son	£50	7	6
Vaughan & Brown	48	16	0
Long (accepted)	47	2	0

Monuments.

Forsaith	£71	0	0
Wilkins & Sons (accepted)	55	0	0

Gilding, &c.

Coombes (accepted)	£80	8	0

Upholstery.

Bartholomew & Co. (accepted)	£110	2	6

For the erection of nine shops at Silvertown, North Woolwich, for Mr. J. Binder. Mr. R. Peters, architect:—

Watson & Dennett, Dulwich	£3,561	0	0
J. Parrish, Stepney	3,530	0	0

For the erection of three cottages at Silvertown, North Woolwich, for Mr. J. Binder. Mr. R. Peters, architect:—

Watson & Dennett, Dulwich	£745	0	0
J. Parrish, Stepney	600	0	0

For the erection of drying-shed at Millstream-road, Dockhead, for Mr. D. McCarthy. Mr. E. Crosse, architect:—

Ayton	£282	12	0
Bullers	280	0	0
Brockwell & Son	249	10	0
B. Wells (accepted)	239	0	0

For rebuilding premises, Nos. 168 and 170, Camberwell-road. Messrs. Isaacs & Florence, architects. Quantities supplied by Mr. L. C. Riddett:—

Conder	£2,285	0	0
Patman & Fotheringham	2,155	0	0
Stimpson & Co.	2,126	0	0
Boyce	1,974	0	0
Tyerman (accepted)	1,935	0	0

For business premises at Fulham, for Mr. Osborn. Mr. Banister Fletcher, architect:—

Maxwell Bros.	£1,937	0	0
Alfred G. Allard	1,707	6	0
Burman	1,570	0	0
Tyerman	1,537	0	0
W. H. Castle	1,341	0	0

For the erection of a house and offices at Hanger-lane, Ealing. Mr. John G. Gibbins, architect:—

	House and Offices.	Conservatory, Porch, Terrace, &c.	Less if Bath stone is used.
J. T. Chappell	£8,578	£1,180	£340
Colls & Sons	8,420	1,160	160
Patman & Fotheringham	8,590	982	600
J. W. Falkner	7,950	1,125	630
J. H. Adamson & Son	7,928	1,046	289
J. Grover (accepted)	7,527	1,027	347

For building warehouse at Bangor Wharf, Belvedere-road, Lambeth, for Mr. Alfred Braby. Mr. Edward Harbuck, architect:—

Stone & Humphrys	£475	0	0
J. Beale	410	0	0
Jennings & Son	405	0	0
Ansell	392	0	0
Tyerman	370	0	0
Newstead (accepted)	367	0	0

For repainting and redecorating Congregational Church Southgate-road. Mr. R. J. Lovell, surveyor:—

Devereux	£336	0	0!
Mason	285	0	0
Smith	261	10	0
Fleming	236	10	0
Staines & Son	194	0	0
Groom	142	10	0
Roberts	125	0	0!

For the erection of offices, St. Swithin's-lane, for Mr. G. T. Powell. Mr. William Wimble, architect:—

Colls & Sons	£22,882	0	0
King & Co.	22,650	0	0
Laurence	22,474	0	0
Brass	22,185	0	0
Scrivener	21,960	0	0
Ashby & Horner	21,500	0	0
Morter	20,340	0	0

For brick culvert for the Acton Local Board:—

Smith	£1,178	0	0
Gilsby	1,125	0	0
Nowell & Robson	976	0	0
Neaves	899	0	0
Bell	865	0	0
Rollings	850	0	0
Pizzey	843	0	0
Rowles	798	0	0
Foard	795	0	0

For new brewery and machinery plant, &c., at Sevenoaks, for Mr. J. S. Bligh. Mr. William Bradford, architect:—

Building.

G. Punnett & Sons	£2,776	0	0
R. Durtnell	2,550	0	0
Willicombe & Oakley	2,550	0	0
Wallis & Clements	2,494	0	0
James Wood & Sons	2,398	0	0
E. Vaughan	2,379	0	0
J. G. Naylar & Son	2,353	0	0
T. Callund & Son (accepted)	2,260	0	0

Millwright and Engineer's Work.

Shears & Sons	775	0	0
H. Pontifex & Son	712	0	0
Bennett & Sons	710	0	0
Reed & Son	685	0	0
Ramsden & Son	646	0	0
Worssam & Son (accepted)	640	0	0

Coppersmith's and Pipe Work.

C. Pontifex & Sons	694	0	0
Reed & Son	660	0	0
Ramsden & Son	565	15	0
H. Pontifex & Sons	537	0	0
Shears & Sons	536	0	0
Bennett & Sons	530	0	0
Worssam & Son (accepted)	499	0	0

Backwork.

Shears & Sons	152	0	0
C. Pontifex & Sons	111	0	0
H. Pontifex & Sons	105	0	0
Bennett & Sons	103	0	0
Ramsden & Son (accepted)	88	14	0

For the erection of chapel, mortuary, custodian's lodge boundary-wall, &c., at the cemetery, for the Corporation of Stratford-upon-Avon. Mr. Thomas T. Allen, architect. Quantities supplied by the architect:—

D. C. Jones & Co.	£2,154	0	0
Millward	1,9 5	0	0
H. Attwood	1,835	0	0
Davis	1,74)	0	0
G. Watson	1,715	0	0
E. T. Kennard	1,698	0	0
W. Lissaman	1,675	0	0
J. Kibler	1,654	0	0
J. Roberts & Sons	1,600	0	0
G. Whateley	1,590	0	0
T. Wilkinson	1,588	0	0
W. Robbins	1,579	0	0
J. Compton	1,550	0	0
E. Tomes	1,530	0	0
W. Green & Son	1,522	7	0
Cox & Kings	1,490	0	0
W. T. Bennett	1,449	0	0
H. & C. Burden (accepted)	1,380	0	0

For pulling down and rebuilding the Dockhead Stores, Dockhead, for Mr. E. G. Chapman. Mr. George Treacher, architect:—

J. Beale (accepted)	£1,947	0	0

For erecting the Britannia public house, Tooley-street, for Messrs. Holt & Co. Mr. Chas. FitzRoy Doll, architect. Quantities supplied by Mr. C. Henman:—

Williams & Son	£2,835	0	0
Croaker & Son	2,797	0	0
Nightingale	2,783	0	0
Smith & Son	2,669	0	0
Grass	2,667	0	0
J. Beale (accepted)	2,599	0	0

For new shop-front and fittings at No. 5, Westbourne-grove, for the Don Association of Woollen Manufacturers:—

Jeffreys	£860	12	0
Sage	805	0	0
Emery	633	0	0
Drew & Cadman	627	0	0

For about 3,000 feet run of 12 inch pipe-sewer, in the Archway and Holmesdale roads, for the Hornsey Local Board:—

J. Strachan & Co., Woodgreen	£1,140	6	11
J. Foard & Co., Westminster	1,055	0	0
Bairston & Crouch, Highgate	953	0	0
J. Taylor & Co., Pimlico	731	0	0
Dunmore, Hornsey (accepted)	699	0	0

For new brick culvert, and widening St. James's-lane, for the Hornsey Local Board:—

Kempling, Camberwell	£777	0	0!
Dunmore, Hornsey	422	0	0
J. Taylor & Co., Pimlico (accepted)	225	0	0!

Accepted for the erection of a house and workshops, Matlock-bridge, for Mr. James Thompson. Mr. John Nuttall, architect:—
W. B. Askew, Matlock (masonry, &c.).
W. Knowles, Matlock (carpenter, joiner, &c.).

Accepted for the erection of a pair of semi-detached cottages, Darley Dale, for Mr. Thomas Holmes. Mr. John Nuttall, architect:—
John Wragg, Matlock (masonry, &c.).
Thomas Bowler, Darley Dale (carpenter, joiner, &c.).

Accepted for the erection of a house, Matlock Bank, for Mr. Joseph Crowder. Mr. John Nuttall, architect:—
James Wall, Matlock (masonry, &c.).
Herbert Statham, Matlock (carpenter, joiner, &c.).

For excavating and burning 2,850 yards of clay, at Henstridge, Somersetshire, for the Blackmoor Vale Dairy Company. Mr. Austin Cooke, architect:—

Hatton, London	£732	0	0
Huntley, London	655	0	0
Ages Brothers, London	520	0	0
Taylor, London	450	0	0
Brooks, Stallbridge	420	0	0

For alterations and reparations to Mount House, Guildford. Messrs. Peak, Lunn, & Peak, architects:—

	Additions and Repairs.	New Bay.
Mitchell Bros. Stratford	£733	£150
Martin, Wells, & Co., Aldershot	650	135
R. Pink, Milford (accepted)	635	118
M. P. Clarke, Guildford	530	125
Garnett & Mills, Guildford	527	122

For works in remaking and draining roadways for the Guildford Urban Sanitary Authority. Mr. H. Peak, surveyor:—

	Cheselden-road.	Brodie-road.
R. Pink, Milford	£246 3	£213 12
W. Patrick, Guildford	240 19	195 10
Martin, Wells, & Co., Aldershot (accepted)	170 0	155 0

Residence, Broadlands-road.—Mr. Clark writes to say Mr. Richardson's tender was not accepted, but that of Mr. D. H. G. Brown, of Holloway, 2,100*l.*

TO CORRESPONDENTS.

"Use of Marbles in Architecture" (letters on this subject shall have attention next week).—R. D. (must adopt the usual course to make the marbles known).—J. N (should send list of names and amounts).—R. S. S.—J. B.—W. Son & A.—T. M.—L. B.—H. & Co.—G. R. F.—B. H. T.—B. F.—H. O S.—S. H.—R P.—H. P. B.—J. W. S.—Dr. G.—F. P.—J. L.—E. B. P.—C. G.—J. P.—H. V.—G. J.—H. T.—J. E.—H H. B.—J. P.—C. R.—W. C. A.—E V. & C. M.—J. E.—S & Son.—J.—T. T. A.—R. A. C.—D. E. & Son.—J. B.—P. L. & P.—T. S. & Co.—C. R.—S. R. F. (thanks).—S. D. (next week).

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

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